

Operating and Service Manual

MODEL

10W1000M7

PART NUMBER

1003001-501

SERIAL NUMBER

10359

ar **AMPLIFIER**
RESEARCH

Souderton, PA 18964-9990 USA

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SECTION I
GENERAL INFORMATION

1.1 GENERAL DESCRIPTION

The Model 10W1000M7 Amplifier is a self-contained, broadband unit designed for laboratory applications where instantaneous bandwidth, high gain, and moderate power output are required. Solid state technology is used exclusively to offer significant advantages in reliability and cost. A Model 10W1000M7 used with a frequency swept signal source will provide 8 watts of linear swept power output from 100-1000 MHz. Typical applications include antenna and component testing, wattmeter calibration, EMI susceptibility testing, use as a driver for frequency multipliers and high power amplifiers and as an RF source for magnetic resonance imaging studies.

1.2 POWER SUPPLIES

This unit has a self-contained 120/240 VAC, 50/60 Hz, regulated power supply. The power consumption is a nominal 225 watts. Primary circuit fusing is provided.

1.3 SPECIFICATIONS

Refer to Amplifier Research Data Sheet on next page for detailed specifications.

SECTION II
OPERATING INSTRUCTIONS

2.1 GENERAL

Operation of the Model 10W1000M7 broadband amplifier is quite simple. The input signal, whether swept or fixed in frequency, is fed into the jack marked INPUT and the amplifier output signal is taken from the jack labeled OUTPUT. The unit is turned ON by activating the power switch. In the event of a unit malfunction, protection is provided by fusing located at the rear of the unit. A polarized, three (3) wire AC power cord is also included with the unit to provide cabinet and chassis grounding to the power mains.

CAUTION:

THE MODEL 10W1000M7 AMPLIFIER IS NOT CRITICAL IN REGARDS TO SOURCE AND LOAD VSWR AND WILL REMAIN UNCONDITIONALLY STABLE WITH ANY MAGNITUDE AND PHASE OF SOURCE AND LOAD VSWR. IT ALSO HAS BEEN DESIGNED TO WITHSTAND, WITHOUT DAMAGE, RF INPUT POWER UP TO TWENTY (20) TIMES ITS RATED INPUT OF 1mW: HOWEVER, SIGNAL LEVELS HIGHER THAN 20 mW OR TRANSIENTS WITH HIGH PEAK VOLTAGES CAN DAMAGE THE AMPLIFIER. ALSO, ACCIDENTAL CONNECTION OF THE 10W1000M7 OUTPUT TO THE INPUT CAUSES OSCILLATIONS WHICH WILL PERMANENTLY DAMAGE THE INPUT TRANSISTOR. INTERNAL CROWBAR PROTECTION IS DESIGNED INTO THE AMPLIFIER TO PROTECT AGAINST INPUT OVERDRIVE.

NOTE:

ALTHOUGH DESIGNED FOR OVERDRIVE AND LOAD TOLERANCE DESCRIBED ABOVE SUBJECTING THE AMPLIFIER TO THESE CONDITIONS SIMULTANEOUSLY CAN CAUSE FAILURE OF THE OUTPUT TRANSISTOR. REPEATED FAILURES OF THIS NATURE WILL NOT BE COVERED UNDER WARRANTY.

The Amplifier is protected by the fast acting Crowbar circuit. The Crowbar may be activated by an input signal greater than required for full output power. When the input signal reaches a level that may cause damage to the amplifier power stages, the 28 volt power supply is turned OFF and the red Overload light on the panel is activated. Typically, the input level required to activate the Crowbar is approximately +1 to +3 dBm.

To reset the Crowbar, reduce the input RF to 0 dBm or lower, and push the Reset switch (S3) located by the Overload light on the front panel.

2.2 AMPLIFIER OPERATION

Figure 2.1 shows the Model 10W1000M7 Amplifier in pictorial form.

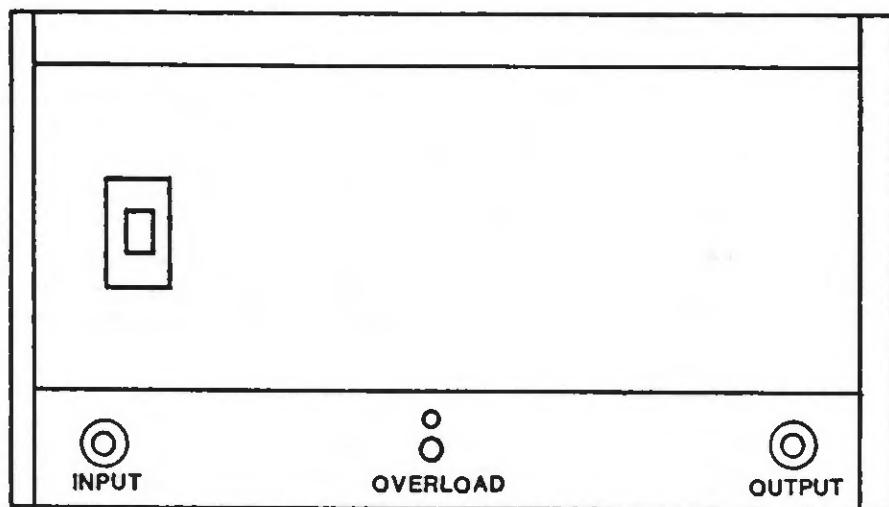


FIGURE 2.1
AMPLIFIER OPERATION

Turn On Sequence:

1. Connect input signal to INPUT connector.
2. Connect load to OUTPUT connector.
3. Select either 120/240 VAC operation by means of switch located on rear of unit.
4. Activate power switch to ON position. A red indicator light mounted within the switch will light when power is applied.

CAUTION:

DO NOT CONNECT UNIT TO 240 VAC MEASURED LINE TO LINE. TO DO SO WOULD RESULT IN ONE SIDE OF THE LINE NOT BEING FUSED, CREATING A HAZARDOUS SITUATION. THE 240 VAC FEATURE IS DESIGNED PRIMARILY FOR USE IN COUNTRIES HAVING 240 VAC MEASURED LINE TO NEUTRAL.

SECTION III

THEORY OF OPERATION

3.1 INTRODUCTION

The Model 10W1000M7 Amplifier consists essentially of five (5) cascaded stages of broadband transistor amplifiers and a push-pull stage which yields a total power gain greater than 8 dB. Input and output matching networks are utilized to provide optimum power transfer of the signal to and from the amplifier with a 50 ohm source and load impedance. Intra-stage feedback is also used to further flatten the frequency response and bias stabilization of the individual stages is provided.

The self-contained power supply employs a full wave rectifier, two (2) integrated circuit regulators to provide stable, low ripple, regulated output voltages.

3.2 AMPLIFIER OPERATION

Refer to Schematic Diagrams No. 1003010 and 1003009

The input signal to the amplifier is fed from the input connector through a signal limiter, directional coupler, and then to the base of the first transistor amplifier stage.

The first stage is connected in the common emitter mode with the emitter connected to ground through two resistors. This configuration allows the selection of the emitter resistors to achieve the desired stage gain. The collector voltage (+) is supplied to this stage from the transistor immediately above it. This allows the RF transistor to operate at a constant DC current and provides a high degree of protection since the transistor current is independent of overdrive and/or short circuits. Temperature dependence is also avoided. The required decoupling and bypassing of the positive supply is provided by ferrite beads and capacitors.

A coupling network is used to route the output of the first stage to the base of the second stage. The first five stages are coupled in substantially the same manner with the fifth stage matched to a 50 ohm output impedance.

The output of the fifth stage is applied through an input matching network to the final output push-pull amplifier. The output of the push-pull amplifier is matched through a ferrite transformer to the 50 ohm output. Q1 and Q3 are bias stages for Q2 and help Q2 to operate at a constant DC current.

3.3 POWER SUPPLY SECTION

Refer to Schematic Diagrams No. 1001100, 1001098, 101507 and 1001132.

Input AC power is fed through RFI filter FL1 before being switched by the main power switch, S1. The AC power indicator is an integral part of S1. S2 serves to select the primary tap configuration of T1 for operation on either 120 or 240 VAC.

CAUTION:

DO NOT CONNECT UNIT TO 240 VAC MEASURED LINE TO LINE. TO DO SO WOULD RESULT IN ONE SIDE OF THE LINE NOT BEING FUSED, CREATING A HAZARDOUS SITUATION. THE 240 VAC FEATURE IS DESIGNED PRIMARILY FOR USE IN COUNTRIES HAVE 240 VAC MEASURED LINE TO NEUTRAL.

The power supply utilizes a full wave rectifier on A1 and A3 assemblies. DC output from the rectifiers is filtered by C1. A1 supplies regulated +VDC to the low level amplifier and A3 supplies regulated +VDC to the Final Amplifier. The A3 supply uses a pre-regulator mounted over the fan to compensate NL/FL fluctuations. The A3 regulator also uses a parallel pass transistor mounted on a bracket above the fan. This pass transistor increases the current capability of the A3 regulator which is necessary to power the Final Amplifier. A1 supplies +VDC to the protection circuit assembly, A2.

3.3.1 Regulator MPLV

3.3.1.1 Regulator A3

Refer to Schematic Diagram No. 1001098.

The full wave rectifier consists of CR1 and CR2. Capacitors C1 and C2 are connected in parallel across the rectifiers to suppress transients caused by the reverse recovery of the diodes. The filtered DC output from the rectifiers pass through the pre-regulator and current boost transistor located external to regulator assembly and series regulator U1. U1 is a linear integrated circuit with adjustable output current and voltage. R2 adjusts the output current and R3 adjusts the output voltage. U1 also contains power limiting, thermal shutdown and input overvoltage protection.

The overload light DS2 is located on the front panel and will light when regulated VDC approaches zero. A crowbar will cause DS2 to light and must be reset to restore proper operation. To reset the crowbar, reduce the input to 0dBm or less and push the red switch (S3) located under the overload light on the front panel.

3.3.1.2 Regulator A1

Refer to Schematic Diagram No. 1001507.

The full wave rectifier consists of CR1 and CR2. Capacitors C1 and C2 are connected in parallel across the rectifiers to suppress transients caused by the reverse recovery of the diodes. The filtered DC output from the rectifiers pass through the pre-regulator (Q2) located external to regulator assembly and series regulator U1. U1 is a linear integrated circuit with adjustable output current and voltage. R2 adjusts the output current and R3 adjusts the output voltage. U1 also contains power limiting, thermal shutdown and input overvoltage protection.

R1 and VR1 output voltage goes to DS2 and protection circuit.

3.3.2 Protection Circuit

Refer to Schematic Diagram No. 1001132.

The Protection Circuit consists of a DC amplifier U1 with its bias circuit, an SCR crowbar Q2, and optical coupler U2. The input signal at E2 originates from a peak detector which detects the RF input level and delivers an equivalent DC potential to the DC amplifier. The input signal is amplified to the desired level. R15 adjusts the threshold setting which turns ON Q2. With Q2 turned ON, the +28VDC at E5 is pulled close to ground and the A1 regulator output is near zero thus removing the DC power to the driver amplifier. Holding current is supplied to E1 from the A1 regulator, through R8 and CR2 and Q2 anode. Thus when Q2 turns ON, it stays ON until the RF amplifier is reset. To reset, reduce the input RF to 0dBm or less and push the red switch (S3) located on the front panel.

The Optical Coupler U2 is used to sense when any Driver or Final regulator output voltage has decreased below a preset value. Should this happen, the output of the Optical Coupler (U2) will turn Q2 ON and cause the RF to the Driver and Final amplifiers to turn OFF, thus protecting the output circuits. The red overload light on the front panel will light. To reset, reduce the input to 0dBm or less and push S3 located on the front panel.

SECTION IV

MAINTENANCE

4.1 GENERAL MAINTENANCE INFORMATION

The Model 10W1000M7 should require very little maintenance since it is a relatively simple instrument. It is built with etched circuit wiring and solid state devices which should ensure long, trouble-free life. However, should trouble occur special care must be taken in servicing to avoid damage to the devices or the etched circuit board.

Since the components are soldered in place, substitution of components should not be resorted to unless there is some indication that they are faulty. In addition, take care when troubleshooting, not to short voltages across the amplifier. Small bias changes may ruin the amplifier due to excessive dissipation or transients.

Components within Amplifier Research instruments are conservatively operated to provide maximum instrument reliability. In spite of this, parts within an instrument may fail. Usually, the instrument must be immediately repaired with a minimum of "down time". A systematic approach can greatly simplify and thereby speed up the repair.

However, due to the importance of the amplifier's alignment, it is recommended that when failure is caused by breakdown of any of the components in the signal circuits, the amplifier be returned to the factory for part replacement and amplifier realignment. Shipping instructions are as follows: Ship PREPAID via United Parcel Service to Amplifier Research Corporation, 160 School House Road, Souderton, PA 18964 USA.

4.2 COVER AND CIRCUIT BOARD REMOVAL

CAUTION:

REMOVE POWER CORD FROM RECEPTACLE BEFORE SERVICING.

4.2.1 Remove top cover by removing the six screws.

4.2.1 Remove circuit board and heatsink by removing the four flathead screws holding it in the housing; (two screws on each side cover).

4.3 TROUBLESHOOTING

The techniques used in troubleshooting solid state instruments are similar to those used in vacuum tube instruments. For instance, a good way to start troubleshooting is to check the supply voltage at the amplifier supply voltage terminal. If it is low or nonexistent, check the power supply components starting with the AC fuses.

The power supply output voltage should be nominally +28 volts. Incorrect voltage could result in over dissipation of the transistors or severe distortion and non-linearity of the amplifier. The power supply may be disconnected from the RF board to enable troubleshooting without danger of damaging the RF board. The amplifier board should be removed (Section 4.2) and the power supply output connected to the 25 ohm, 50 watt resistor to simulate the amplifier load.

Finally, determine if the individual amplifier stages are operational by injecting a signal into the transistor base and looking for an indication of output.

4.4 SERVICING ETCHED CIRCUIT BOARDS

When soldering leads, use a hot forty watt or smaller iron. Apply heat sparingly to the leads, not to the printed wiring on the board. Before installing new parts, clean holes to receive new part without forcing. Have new leads tinned to receive solder quickly with a minimum of heat and without residue.

SECTION V

REPLACEABLE PARTS

5.1 INTRODUCTION

This section contains information for ordering replacement parts. Information is provided for obtaining parts through Amplifier Research, and or from the manufacturer of the part. Included in this section are the following:

- Ordering information
- Nonlisted parts
- Circuit designators
- Manufacturers' abbreviation listing
- Master list
- Schematics and Bills of Material

5.2 ORDERING INFORMATION

To obtain replacement parts, address order to Amplifier Research, 160 School House Road, Souderton, PA 18964 USA. Identify and include instrument model and serial numbers.

TEL : 215-723-8181
TWX : 510-661-6094
FAX : 215-723-5688

5.3 NONLISTED PARTS

To obtain a part that is not listed, include:

- a. Instrument model number
- b. Instrument serial number
- c. Description of the part
- d. Function and location of the part

5.4 CIRCUIT DESIGNATORS

REF= reference document

A = assembly

B = fan

BT = battery

C = capacitor

CB = circuit breaker

CR = diode
DL = delay line
DS = lamp
E = terminal
F = fuse
FL = filter
J = connector, recept
K = relay
L = inductor
M = meter
P = connector, plug
Q = transistor, semiconductor
R = resistor, potentiometer
RT = temperature sensing element
S = switch
T = transformer
TB = terminal block
TP = test point
U = integrated circuit
V = vacuum tube, neon bulb, photocell, etc.
VR = zener diode
W = wire, cable
X = socket
Y = crystal unit

5.5

MANUFACTURERS' ABBREVIATION LISTING

This section contains a list of manufacturers' abbreviations. These abbreviations appear under the drawing number column on the bills of material. The three letters or symbols before the backward slash represent the name of the manufacturer. The number after the backward slash represents the manufacturer's part number. See appendix A for complete listing of manufacturers' abbreviations.

5.6

MASTER LIST

The master list provides the user with a quick view of the major assemblies of a unit. The assemblies are displayed in an indented format with the corresponding schematic shown in the right column.

5.7

SCHEMATICS and BILLS of MATERIAL

The schematics and bills of material are arranged in sequence according to the master list. The schematic which appears first on the master list also appears first in the schematic and bill of material section. Following each schematic are the appropriate bills of material relating to the schematic. This pattern will be repeated throughout this section.

The bills of material used in this manual are computer generated. Each computer part number appears only once on a bill of material along with the total quantity used, and all of the applicable circuit designators. The bills of material are designed to organize the parts in alphanumeric order of their circuit designators. Typical manufacturer part numbers can be found in the drawing number column. The manufacturer's abbreviation appears first, separated by a backward slash, which is followed by the part number.

Amplifier Research has assigned computer product numbers to all parts in inventory. The computer product numbers are located on the left side of the bill of material in the part number field. When referencing or ordering parts from Amplifier Research, it is best to use the computer product number. Parts may also be ordered directly from the manufacturer using the manufacturer's part number if desired.

STANDARD ABBREVIATIONS FOR MANUFACTURERS - APPENDIX A REV X

AAV	AAVID
ABB	ABBEON
ACA	ANTENNA CORPORATION OF AMERICA
ACO	ARCO
ADA	ADALET
AEC	ARNOLD ENGINEERING COMPANY
AEP	APPLIED ENGINEERING PRODUCTS
AER	AEROQUIP
AHC	AIRLINE HYDRAULICS CORPORATION
AIN	AIN PLASTICS
AIR	AIRPAX
AIT	AERITALIA
ALC	ALCO
ALE	ALLIED ELECTRONICS
ALI	ASTROLAB INCORPORATED
ALP	ALPHA
AMA	AMATOM
AMC	AMPEX CORPORATION
AMH	AMPHENOL
AMI	AMPLIFONIX INCORPORATED
AMP	AMP INCORPORATED
AMR	AMREP
AMS	AMERICAN STANDARD
APG	AP-O-GEE INDUSTRIES
APN	AMERICAN PRECISION
APO	AMPROBE
APP	A.P. PRODUCTS INCORPORATED
APR	AMPERITE
APX	AMPEREX
ARC	AMPLIFIER RESEARCH CORPORATION
ARE	ARROW ELECTRONICS
ARO	AROMAT CORPORATION
ARP	APPLE RUBBER PRODUCTS INCORPORATED
ASB	ASTRO-BUBBLES
ASC	AMERICAN SWITCH CORPORATION
ASD	AMERICAN STANDARD
ASP	ASSOCIATED SPRING
ATL	ATLEE
AVA	AVA CORPORATION
AVF	ALLENTOWN VALVE & FITTING COMPANY
AVX	AVX CORPORATION
A-B	ALLEN BRADLEY
A-M	AEC MAGNETICS
A-S	ALCOSWITCH
A-T	AHAM-TOR

STANDARD ABBREVIATIONS FOR MANUFACTURERS - APPENDIX A REV X

BBI	BARON-BLAKESLEE INCORPORATED
BDX	BENDIX
BEL	BELDEN
BEY	BEY ELECTRIC
BFI	BUCKEYE FORGE INCORPORATED
BKM	BECKMAN
BOK	BOKER'S INCORPORATED
BOP	BOPLA ENCLOSURES
BOR	BOURNS
BUD	BUD COMPANY
BUS	BUSS
B-C	BONCO CORPORATION
B-E	BRIM ELECTRONICS
B-T	BEAU-TECH
B-V	BEAU/VERNITRON
CAD	CADDOCK
CAM	CAMBION
CAN	CANNON
CAP	CANPACK
CAR	CARLING
CCI	CRL COMPONENTS INCORPORATED
CDI	COAXIAL DYNAMICS INCORPORATED
CEN	CENTURY ELECTRONICS
CES	COUNTY ELECTRIC SUPPLY COMPANY
CHE	CHERRY
CHR	CONNECTICUT HARD RUBBER
CIN	CINCB
CJS	CENTRAL JERSEY SCREW & BOLT
CKS	C & K COMPONENTS INCORPORATED
CLA	CLAROSTAT
CLC	CHICAGO LOCK COMPANY
CMI	CERAMIC MAGNETICS INCORPORATED
CMP	COMMERCIAL PLASTICS
CNF	CINCINNATI FAN
COE	COMP ENTERPRISES
COL	COLDER PRODUCTS
COM	COMPUCON
CON	CONCORD ELECTRONICS
COP	COMPLETE PACKAGING
COR	CORCOM
CPC	C.P. CLARE
CPL	COMPULITE
CPS	COLOR PRINT SCREENING
CRC	CRC CHEMICALS
CRL	CENTRALAB

STANDARD ABBREVIATIONS FOR MANUFACTURERS - APPENDIX A REV X

CTS.....	CTS
CUS.....	CUSTOM
C-D.....	CORNELL-DUBILIER
C-E.....	CORNING ELECTRONICS
C-P.....	CAPLUG COMPANY
C-T.....	CANADIAN THERMOSTATS
DAL.....	DALE
DAY.....	DAYTON
DEN.....	DENNISON
DIA.....	DIALIGHT
DIL.....	DIELECTRIC LABS
DKK.....	DOW KEY/KILOVAC
DSC.....	DE-STA-CO
DTP.....	DOYLESTOWN PRINTING
D-E.....	DABURN ELECTRONICS
D-G.....	DIMCO-GRAY
D-K.....	DIGI-KEY CORPORATION
ECO.....	EATON CORPORATION
EFG.....	E.F. JOHNSON
EGL.....	ELGAL
EIC.....	ELECTRO INSULATION CORPORATION
EIM.....	EIMAC
ELM.....	ELMENCO
ELR.....	ENGLER INSTRUMENT
EMC.....	E.M.C. TECHNOLOGY
EMM.....	ENGELMANN MICROWAVE
EOD.....	ELECTRO-OPTIC DEV
ERI.....	ERIE TECHNOLOGY PRODUCTS
ERM.....	EREM CORPORATION
ESX.....	ESSEX
ETA.....	ETA
EVE.....	EVEREST ELECTRONIC EQUIPMENT
EVR.....	EVEREADY
EWS.....	ELMWOOD SENSOR
E-C.....	EMERSON AND CUMMING
FCH.....	FAIRCHILD
FCI.....	FILTER CONCEPTS INCORPORATED
FER.....	FERRONICS
FEX.....	FERROXCUBE
FLO.....	FLO TRAN PNEU-DRAULICS INCORPORATED
FOS.....	FIBRE OPTIC COMMUNICATION SPECIALISTS
FRK.....	FROST KING
FRM.....	FREEDMAN/MALTA
FRP.....	FAIR-RITE PRODUCTS
FWC.....	FW CAPACITORS
F-S.....	FASTENER SPECIALTY

STANDARD ABBREVIATIONS FOR MANUFACTURERS - APPENDIX A REV X

GAL.....	GALLAGER
GCE.....	G.C. ELECTRONICS
GEM.....	GEM
GOL.....	GOLDKAMP
GRA.....	GRAINGER
GRE.....	GREYARC
GRS.....	GENERAL RADIO SUPPLY
GSI.....	GSI
GTL.....	GILWAY TECHNICAL LAMP
G-E.....	GENERAL ELECTRIC COMPANY
G-I.....	GENERAL INSTRUMENT
HAD.....	HARRY DAVIES
HAN.....	HANSON
HAV.....	HAVERHILL CABLE AND MANUFACTURING
HDB.....	HOMER D. BRONSON
HEC.....	HIGH ENERGY CORPORATION
HEI.....	HEINEMANN
HEX.....	HEXACON
HHS.....	H.H. SMITH
HIM.....	HITACHI MAGNETICS
HMF.....	HILTON MANUFACTURING
HMN.....	HENRY MANN
HOL.....	HOLLINGSWORTH
HOW.....	HONEYWELL
HPC.....	H.P. CADWALLADER
HSI.....	HUBER & SUHNER INCORPORATED
HUB.....	HUBBEL
HUC.....	HUDSON CAN COMPANY
HWK.....	HAWKINS METAL FABRICATION
H-P.....	HEWLETT/PACKARD
H-R.....	HERBACH & RADEMAN
IBM.....	IBM
ICI.....	ILLINOIS CAPACITOR INCORPORATED
IDE.....	IDEAL
IER.....	IERC
ILS.....	ILSCO
IMB.....	IMB
IMC.....	IMC
INC.....	INTERNATIONAL CRYSTAL MFG COMPANY
INM.....	INMET
IPI.....	INSULFAB PLASTICS INCORPORATED
IRC.....	INTERNATIONAL RECTIFIER CORPORATION
IRM.....	IR-CRYDOM
ITF.....	INTERFAN
ITJ.....	ITT-JENNINGS
ITT.....	ITT CANNON
I-E.....	IMPERIAL EASTMAN
I-G.....	INDIANA GENERAL
I-S.....	INSTRUMENT SPECIALTIES

STANDARD ABBREVIATIONS FOR MANUFACTURERS - APPENDIX A REV X

JAR.....	J.A. REINHARDT
JDE.....	JOHANSON DIELECTRICS
JFD.....	JFD
JOH.....	JOHANSON
JON.....	JONATHAN MANUFACTURING
JOR.....	JORITA
KCC.....	KEYSTONE CARBON COMPANY
KEY.....	KEYSTONE ELECTRONICS
KIN.....	KINGS
KLE.....	KLEIN
KSD.....	KESTER SOLDER DIVISION
KUL.....	KULKA
K-D.....	KD COMPONENTS
LAF.....	LAFRANCE CORPORATION
LBA.....	LAMBDA ELECTRONICS INCORPORATED
LEM....	LIAISONS ELECTRONIQUES MECHANIQUES
LEV.....	LEVITON MANUFACTURING COMPANY
LIF.....	LITTLEFUSE
LOC.....	LOCTITE CORPORATION
LOR.....	LORD CORPORATION
MAL.....	MALLORY
MCG.....	McGILL
MCS.....	McMASTER CARR SUPPLY COMPANY
MEP.....	MEPCO-ELECTRA
MET.....	METUCHEN CAPACITOR
MFG.....	MANUFACTURER
MHW.....	M.H. & W. COMPANY
MIC.....	MICROMETALS IRON POWDER CORES
MIN.....	MINI-CIRCUITS
MIP.....	MICRO PLASTICS
MIR.....	MINOR RUBBER COMPANY
MIS.....	MICROSWITCH
MMI.....	MAGNETIC METALS INCORPORATED
MMM.....	MINNESOTA MINING MANUFACTURING
MOC.....	MOCAP
MOD.....	MODUTEC
MOL.....	MOLEX
MON.....	MONSANTO
MOS....	M/A-COM OMNI SPECTRA INCORPORATED
MOT.....	MOTOROLA
MPC.....	MULTI-PRODUCTS
MRS.....	MARSH
MIT.....	MULTITHERM CORPORATION
MUE.....	MUELLER
MUR.....	MURATA/ERIE

STANDARD ABBREVIATIONS FOR MANUFACTURERS - APPENDIX A REV X

MWA.....	MICROWAVE ASSOC
MWC.....	MIDWEST COMPONENTS
MWM.....	MIDWEST MICROWAVE
MWS.....	MICROWAVE SEMI-CONDUCTORS
M-C.....	M & C SPECIALTIES
M-E.....	MASTER ELECTRICIAN
M-M.....	MILI-MAX CORPORATION
NAB.....	NORTH AMERICAN BRASS AND COPPER
NEB.....	NEBS INCORPORATED
NET.....	NETEK
NIE.....	NIELSEN HARDWARE
NJS.....	N.J. SEMI
NMB.....	NMB TECHNOLOGIES INCORPORATED
NOB.....	NOBLITT BROTHERS & COMPANY
NPP.....	NORTH PENN POLISHING & PLATING
NSI....	NATIONAL SEMI-CONDUCTOR CORPORATION
NVS....	NORTHAMPTON VALLEY SERVICE COMPANY
N-M.....	NATIONAL MOLDITE
N-P.....	NEM-PACK
OHM.....	OHMITE
OKI.....	OK INDUSTRIES
OME.....	OMEGA
OMR.....	OMRON
OPT.....	OPTIMAX
PAE.....	PACIFIC ELECTRICORD
PAJ.....	PHILLIPS AND JACOBS
PAM.....	PAMOTOR
PAN.....	PANASONIC
PAP.....	PAPST
PBC.....	POTTER & BRUMFIELD CORPORATION
PCI.....	PENN CRAFT INDUSTRIES
PEC.....	PENN CONTROLS
PEK.....	PEAK
PEN.....	PENN ENGINEERING
PFL.....	POLYFLON
PFS.....	POWER FILM SYSTEMS
PHI.....	POWER HYBRID
PLM.....	PLASTIC & METALS
PNT.....	PANDUIT
POW.....	POWEREX
PRC.....	PRECISION RUBBER COMPANY
PSI....	POWER SEMI-CONDUCTOR INCORPORATED
PSP.....	PROJECT SUPPORT INCORPORATED
PTC.....	PRECISION TUBE COMPANY
P-B.....	PENN-BASCO

STANDARD ABBREVIATIONS FOR MANUFACTURERS - APPENDIX A REV X

QUI.....	QUICKSET
RAF.....	R.A.F. ELECTRONIC HARDWARE INC
RCA.....	RCA
RCC.....	RAYCHEM CORPORATION
RCL.....	RCL
REL.....	RELIANCE MICA COMPANY
REM.....	REMTEK
RES.....	ROSE ENCLOSURES SYSTEMS
RIC.....	RICHCO
ROG.....	ROGAN
RON.....	RONCO CORPORATION
ROS.....	ROSS ENGINEERING
ROT.....	ROTRON
ROW.....	ROWLAND
RPC.....	REPUBLIC PACKAGING CORPORATION
RUS.....	RUSSELL INDUSTRIES
R-N.....	ROBINSON-NUGENT
R-S.....	RADIO SHACK
SAG.....	SAGE LABORATORIES
SAI.....	SCIENTIFIC-ATLANTA INCORPORATED
SAM.....	SAMTECH
SBC.....	SCHROEDER BROTHERS CORPORATION
SCD.....	SCHADOW
SCH.....	SCHAUER
SCI.....	SPECTRUM CONTROL INCORPORATED
SCO.....	SCOTCH
SEM.....	SEMIKRON
SEV....	SEVENTY-THREE MANUFACTURING COMPANY
SGL.....	SGL INDUSTRIES
SGS.....	SGS
SIE.....	SIEMENS
SIM.....	SIMPSON
SLE.....	SL ELECTRONICS
SOC.....	SOUTHCO
SOE.....	STANDARD OIL ENGINEERING
SOH.....	SOHIO
SOL.....	SOLDAPULLT
SOW.....	SOLDER WICK
SPC.....	SPC TECHNOLOGY
SPE.....	SPECTROL
SPL.....	SPRA-LUBE
SPR.....	SPRAGUE
SPS.....	SPRINGFIELD PAPER SPECIALISTS
SSM.....	SOLID STATE MICROWAVE
SSS.....	S & S TECH
SST.....	SST

STANDARD ABBREVIATIONS FOR MANUFACTURERS - APPENDIX A REV X

STA.....	STANCOR
STB.....	SEAL-TITE BAG COMPANY
STM.....	SEASTROM MANUFACTURING COMPANY
STP.....	STACKPOLE
STW.....	STOCKWELL
SUS.....	SUNSHINE SCIENTIFIC
SWC.....	SWITCHCRAFT
S-B.....	SPEED BEND
S-E.....	STEMCO/ENGLER
S-F.....	SYDNEY FRIEDRICH
S-L.....	SWAGELOCK
S-M.....	STRIP-MASTER
TAB.....	THOMAS & BETTS
TAI.....	TAI CORPORATION
TAN.....	TANSISTOR
TCC.....	THOMSON PASSIVE COMPONENTS CORP
TEL.....	TELEFUNKEN
TEM.....	TEMPIL
TET.....	TECHNITOOL
TFI.....	THRUWAY FASTENERS INCORPORATED
THM.....	THERMALLOY
THS.....	THREADED SCREW PRODUCTS COMPANY
TII.....	TEXAS INSTRUMENTS INCORPORATED
TRD.....	TRIAD
TRI.....	TRI-COUNTY
TRS.....	TRI-STATE
TRT.....	TRAVERS TOOL COMPANY
TRW.....	TRW
TXS.....	TEXAS SPECTRUM
T-P.....	THOMAS PRODUCTS
UEC.....	UNITED ELECTRIC
ULI.....	ULINE
UNC.....	UNICORP
UNE.....	UNELCO
USC.....	USECO
UTI.....	UTICA
VIC.....	VICTOREEN
VIT.....	VITRAMON
VOL.....	VOLTRONICS CORPORATION
WAK.....	WAKEFIELD
WAL.....	WALDOM
WEC.....	WESTERN ENTERPRISES COMPANY
WEI.....	WEICO
WEL.....	WELLER
WES.....	WEINSTEIN
WGV.....	WARREN G-V
WIL.....	WILTRON

STANDARD ABBREVIATIONS FOR MANUFACTURERS - APPENDIX A REV X

WIS.....	WEBER INDUSTRIAL SUPPLY COMPANY
WIT.....	WITTEK DIV. A MICRODOT COMPANY
WPI.....	WIRE PRODUCTS INCORPORATED
WPS.....	WORKPLACE SYSTEM
WSC.....	WEST POINT SUPPLY COMPANY
W-E.....	WELLS ELECTRONICS INCORPORATED
W-I.....	WEIDMULLER INCORPORATED
XAC.....	X-ACTO
XCE.....	XCELITE
YNG.....	YOUNGS
YPC.....	YARDLEY PRODUCTS CORPORATION
ZER.....	ZERO MANUFACTURING COMPANY
ZIE.....	ZIERIC

ML1003001-501

MODEL 10W1000M7

DESCRIPTIVE INFORMATION	SUPPORT DOCUMENTS
FREQUENCY 120 - 1000 MHZ	TEST DATA SHEET 1000892
POWER OUT 10 WATTS CW	TEST PROCEDURE 1001334
PRIMARY POWER 120/240 VAC, 50/60 HZ	ENVELOPE DWG
COOLING INTERNAL FAN	SALES DATA SHEET INFORMAIL PRINTED
PACKAGE 19.5" X 6.5 X 8.0"	MANUAL CLASS I
OPTIONS INCLUDED	REMARKS
	TECH. J.A.V. JU 26 1990

FORM 108 BEV0584



DATE	R	DATE	R	DATE	R
60+87	-				

MASTER LIST

09:37:28 14 MAY 1990

AMPLIFIER RELEASER

*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E3056

PAGE: 1

BILL NO: 1003001-501 REV: A U/M: EA DRAWING NO:
 MODEL 10W1000M7,100MHZ-1000MHZ,10 WATTS

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY/PER DRAWING NUMBER	CRCT-DSGN
0000	1002873-501	A	COVER KIT,14" LAB	EA	1.000	
0000	1002874-501		SHIPPING KIT,14" LAB	EA	1.000	
0000	1002875-502	A	POWER SUPPLY AND HOUSING	EA	1.000	
0000	1003002-501	B	RF ASSY	EA	1.000	ARC\1003002
0000	1003011-501		MANUAL,MODEL 10W1000M7	EA	4.000	
0000	1004754-101-F6-M30	-	PLATE,MODEL IDENTIFICATION (MODEL 10W1000M7)	EA	1.000	ARC\1004754
0000	11018		SCREW,MACH,PAN HO,CROSS-REC,ZN,6-32 X .38,TYPE SW	EA	14.000	
0000	11020		SCREW,MACH,PAN HO,CROSS-REC,S/S,6-32 X .50	EA	3.000	
0000	11064		SCREW,MACH,FLAT HO,100 DEG,CROSS-REC,S/S,6-32X.38	EA	4.000	
0000	12001		WASHER,LOCK,INT TOOTH,S/S,#6	EA	3.000	
0000	12011		WASHER,FLAT,S/S,#6,.312 00	EA	3.000	
0000	66147		POWER CORD,3 CONDUCTOR,18AWG,UNIVERSAL DETACHABLE	EA	1.000	PAE\10120-009-BL
1300	35028		FUSE,FAST ACTING,1.5A,250V	EA	1.000	LIF\31201.5
1300	35033		FUSE,FAST ACTING,3A,250V	EA	1.000	LIF\312003

09:37:29 14 MAY 1990

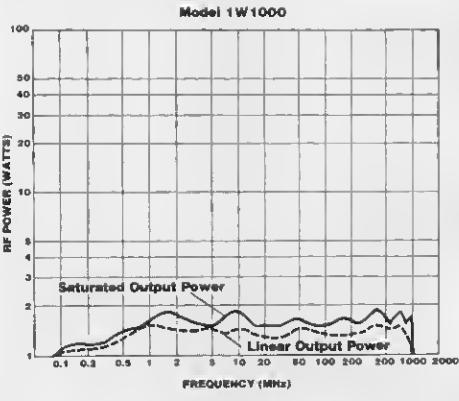
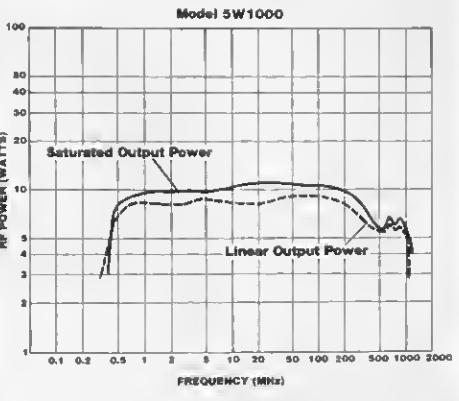
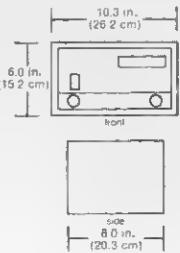
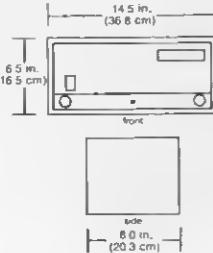
AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1002873-501 REV: A U/M: EA DRAWING NO:
COVER KIT,14" LAB

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-DSGN
5000	1002243-101-F2	E	COVER, TOP	EA	1.000	ARC\1002243
5000	1002243-105-F2	E	GRILL,EXHAUST	EA	1.000	ARC\1002243

Specifications

	1W1000	5W1000
Power output, cw up to	2 watts	9 watts
minimum	1 watt	5 watts
Power output, cw linear (less than 1 dB compression into 50 ohms)	1 watt minimum	5 watts minimum
Flatness	± 1.0 dB maximum; ± 0.5 dB typical	± 1.5 dB maximum; ± 1.0 dB typical
Frequency response	100 kHz to 1000 MHz	500 kHz to 1000 MHz
Input for rated output	1.0 milliwatt max.	1.0 milliwatt max.
Power gain	30 dB minimum	37 dB minimum
Input Impedance	50 ohms; VSWR 2.0:1 max.	50 ohms; VSWR 2.0:1 max.
Output Impedance	50 ohms; VSWR 2.5:1 max.	50 ohms nominal
Mismatch tolerance	100%	100%
(ability to operate without damage, foldback, or oscillation with any magnitude and phase of source and load impedance)		
Modulation capability	100%	100%
(ability to reproduce faithfully AM, FM, or pulse modulation appearing on input signal)		
Noise Figure	8 dB typical	10 dB typical
Harmonic distortion	Minus 20 dBc max. at 1 watt.	Minus 20 dBc max. at 5 watts.
Third-order Intercept point	42 dBm typical	48 dBm typical
Primary power	100/110/120/200/208/220/ 240 Vac ± 5%, 50/60 Hz, single-phase, 50 W max.	100/110/120/200/208/220/ 240 Vac ± 5%, 50/60 Hz, single-phase, 110 W max.
RF Connectors	Type N female	Type N female
Cooling	Forced air (self-contained fans)	Forced air (self-contained fans)
Weight	4.1 kg (9.0 lb)	9.1 kg (20.0 lb)
Typical Power Curves		
		
		
Dimensions		
		
		

10W1000**50W1000****10W1000M7**22 watts
10 watts

10 watts minimum

± 1.5 dB maximum;
± 1.0 dB typical

1 to 1000 MHz

1.0 milliwatt max.

40 dB minimum

50 ohms; VSWR 2.0:1 max.

50 ohms nominal

100%

100%

noise floor data on request

Minus 20 dBc max. at 10 watts

50 dBm typical

100/110/120/200/208/220/
240 Vac ± 5%, 50/60 Hz,
single-phase, 400 W max.

Type N female

Forced air (self-contained fans)

28.4 kg (63.0 lb)

100 watts
50 watts

40 watts minimum

± 2.0 dB maximum;
± 1.5 dB typical

1 to 1000 MHz

1.0 milliwatt max.

47 dB minimum

50 ohms; VSWR 2.0:1 max.

50 ohms nominal

100%

100%

noise floor data on request

Minus 20 dBc max. at 40 watts

58 dBm typical

100/110/120/200/208/220/
240 Vac ± 5%, 50/60 Hz,
single-phase, 1900 W max.

Type N female

Forced air (self-contained fans)

98.0 kg (215.0 lb)

15 watts
10 watts

8 watts minimum

± 1.5 dB maximum;
± 1.0 dB typical

100 to 1000 MHz

1.0 milliwatt max.

40 dB minimum

50 ohms; VSWR 2.0:1 max.

50 ohms nominal

100%

100%

noise floor data on request

Minus 20 dBc max. at 8 watts

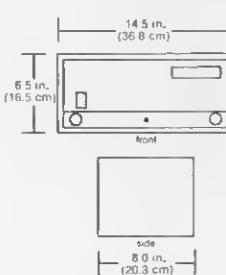
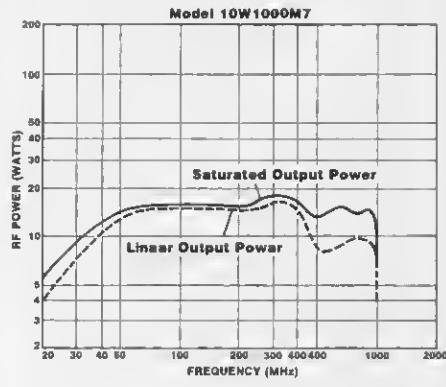
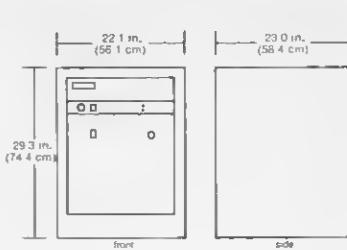
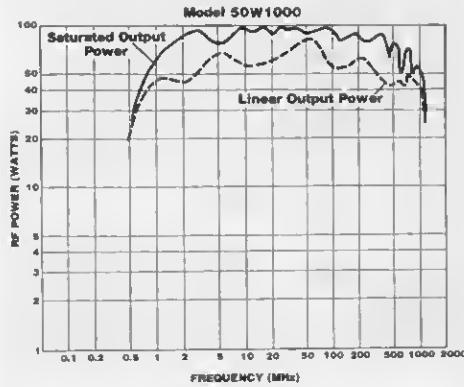
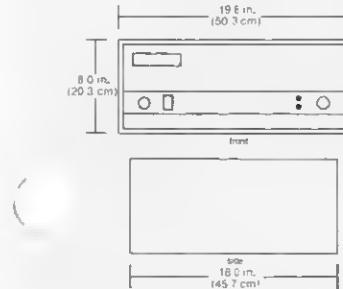
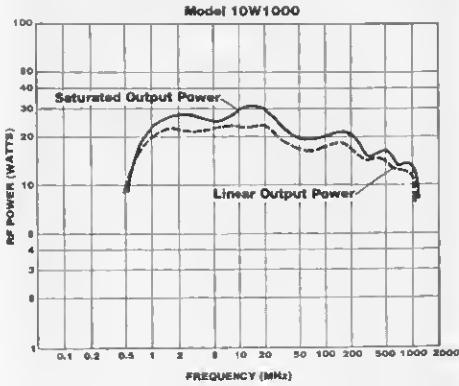
49 dBm typical

100/110/120/200/208/220/
240 Vac ± 5%, 50/60 Hz,
single-phase, 150 W max.

Type N female

Forced air (self-contained fans)

9.1 kg (20 lb)



25W1000M7

100W1000M7

40 watts
25 watts

180 watts
100 watts

Power output, cw
up to
minimum

20 watts minimum

70 watts minimum

Power output, cw, linear
(less than 1 dB compression
into 50 ohms)

± 1.5 dB maximum;
 ± 1.0 dB typical

± 2.0 dB maximum;
 ± 1.5 dB typical

Flatness

100 to 1000 MHz

100 to 1000 MHz

Frequency response
(instantaneous)

1.0 milliwatt max.

1.0 milliwatt max.

Input for rated output

45 dB minimum

50 dB minimum

Power gain

50 ohms; VSWR 2.0:1 max.

50 ohms; VSWR 2.0:1 max.

Input impedance

50 ohms nominal

50 ohms nominal

Output impedance

100%

100%

Mismatch tolerance
(ability to operate without
damage, foldback, or oscillation
with any magnitude and phase
of source and load impedance)

100%

100%

Modulation capability
(ability to reproduce faithfully
AM, FM, or pulse modulation
appearing on input signal)

noise floor data on request

noise floor data on request

Noise Figure

Minus 20 dBc max. at 20 watts

Minus 20 dBc max. at 70 watts

Harmonic distortion

52 dBm typical

60 dBm typical

Third-order Intercept point

100/110/120/200/208/220/
240 Vac $\pm 5\%$, 50/60 Hz,
single-phase, 750 W max.

100/110/120/200/208/220/
240 Vac $\pm 5\%$, 50/60 Hz,
single-phase, 3000 W max.

Primary power
(select via internal taps)

Type N female

Type N female

RF Connectors

Forced air (self-contained fans)

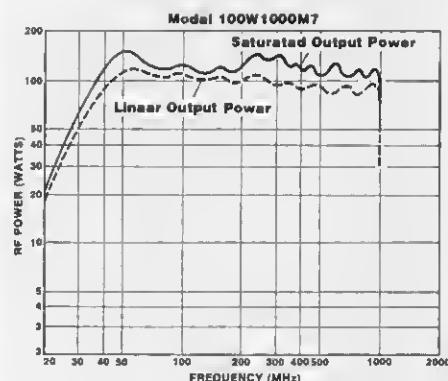
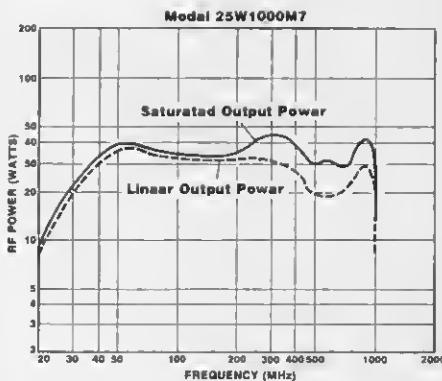
Forced air (self-contained fans)

Cooling

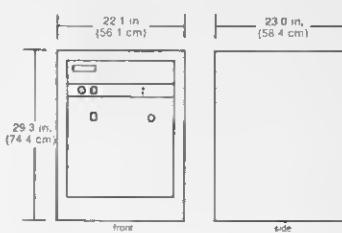
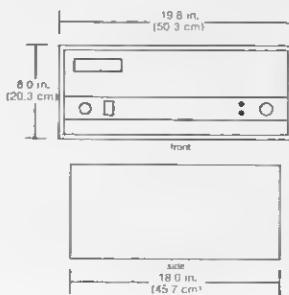
28.4 kg (63.0 lb)

98.0 kg (215.0 lb)

Weight



Typical Power Curves



Dimensions

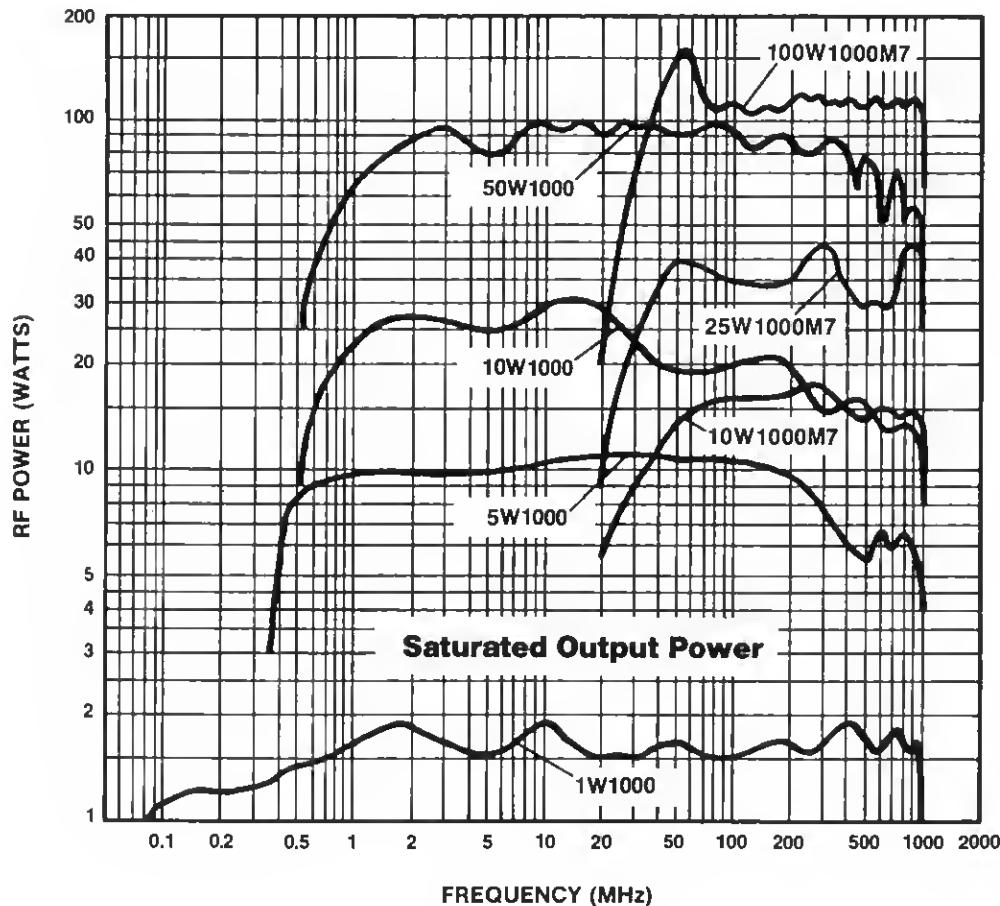
Models 1W1000 and 5W1000 are available as OEM rf circuit modules without power supply. Contact Amplifier Research for further information.

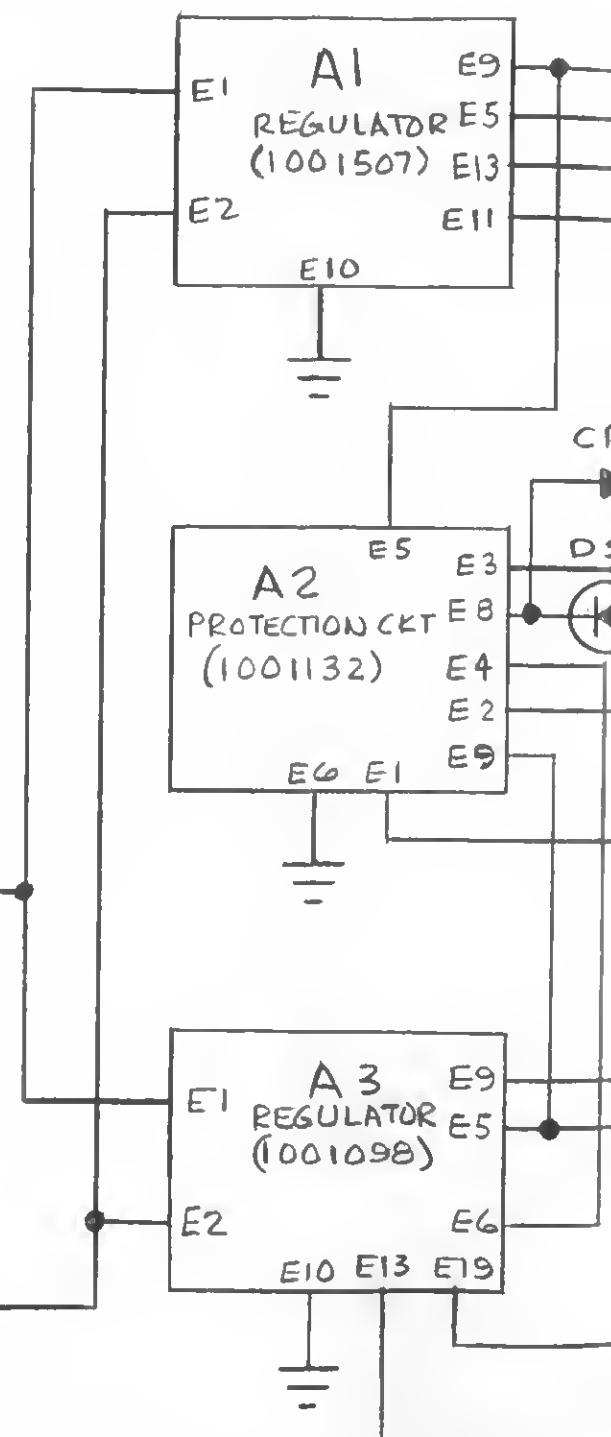
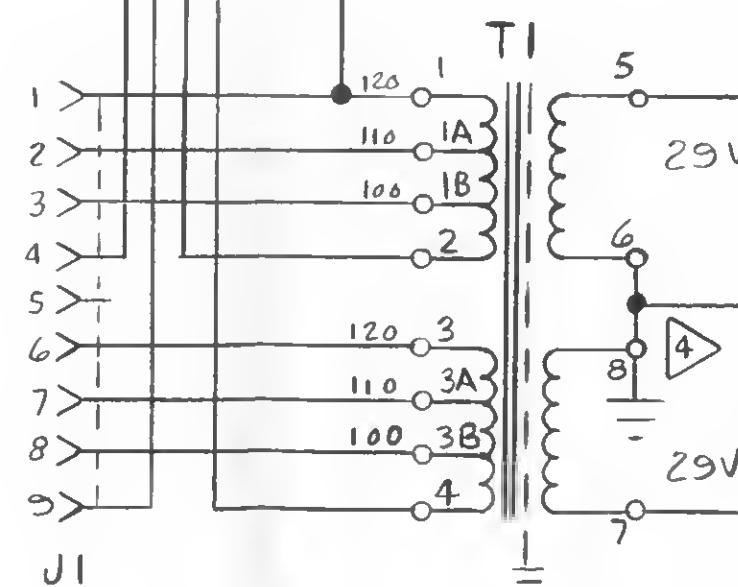
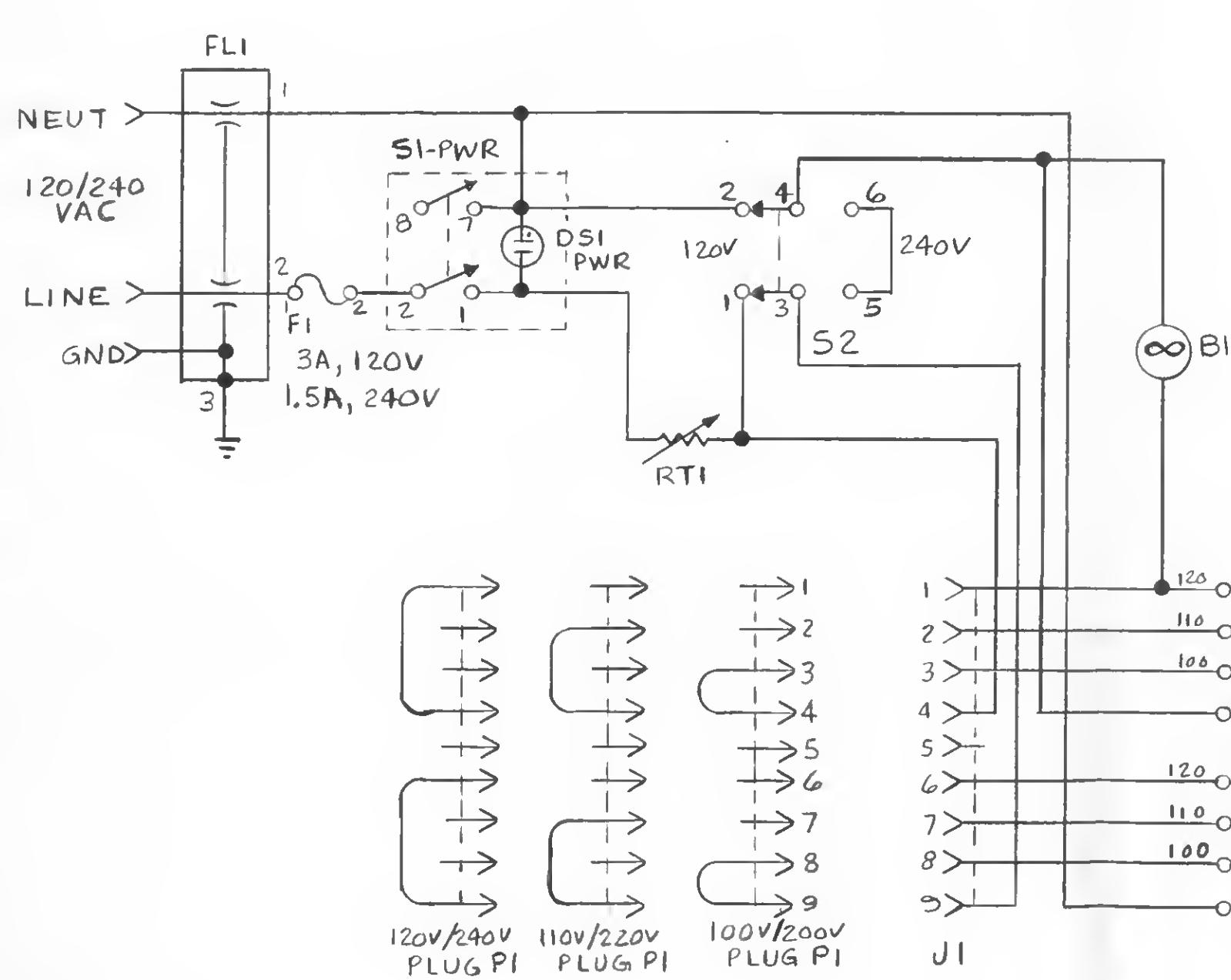
1 watt to 100 watts. 100 kHz to 1 GHz.

The Amplifier Research "W" Series constitutes a complete family of self-contained ultra-broadband solid-state amplifiers providing linear operation over the spectrum from 100 kHz to 1000 MHz. The amplifiers are conservatively rated at 1, 5, 10, 25, 50, and 100 watts, and feature instantaneous bandwidth, flat output, and immunity to even worstcase load mismatch including shorted or open cable without damage or system shutdown.

Applications

- Sweep, cw, and pulse rf and emi susceptibility testing without bandswitching or tuning
- Antenna and component testing, and equipment calibration
- General laboratory instrumentation





NOTES:

RF

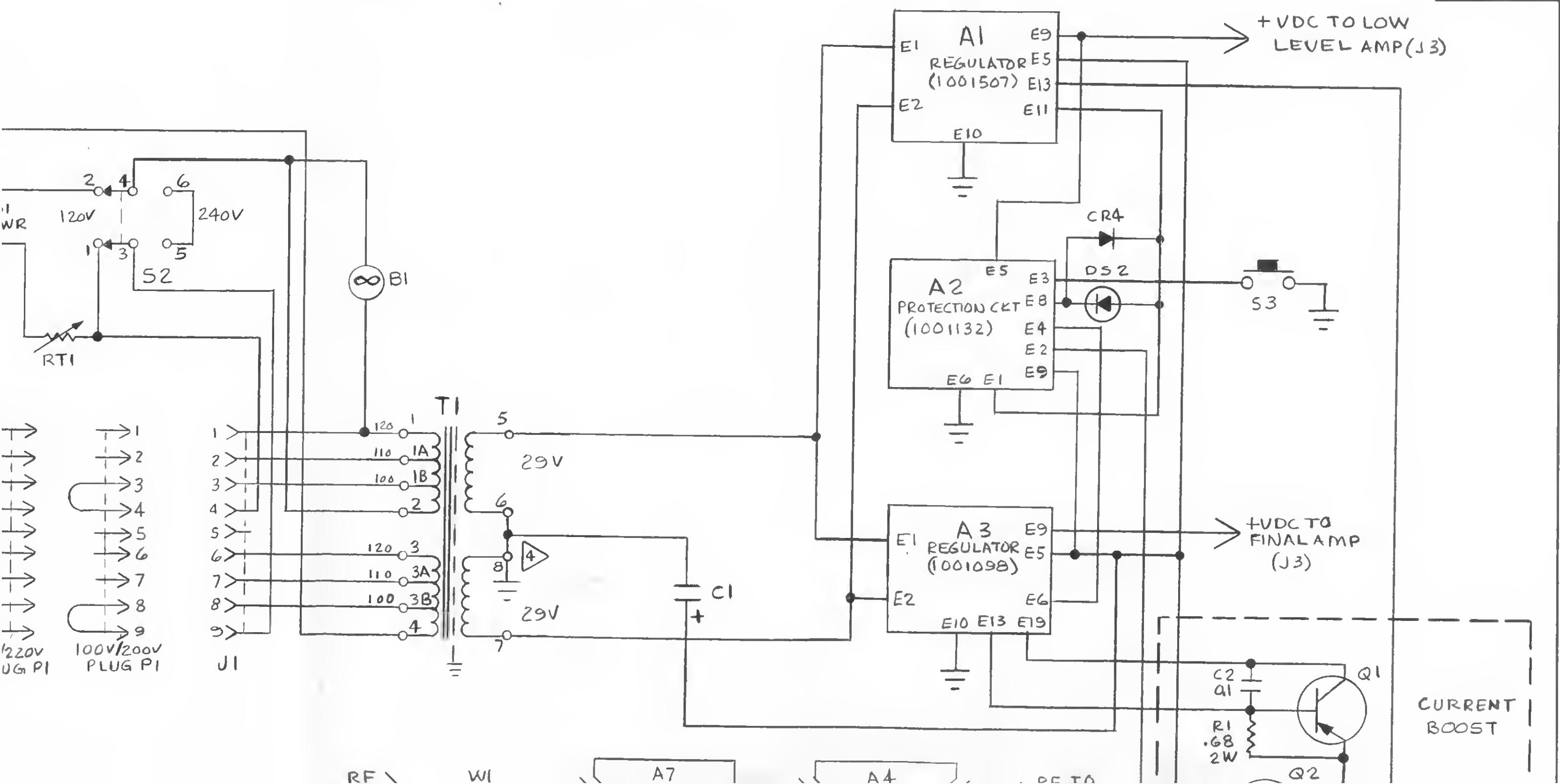
WI

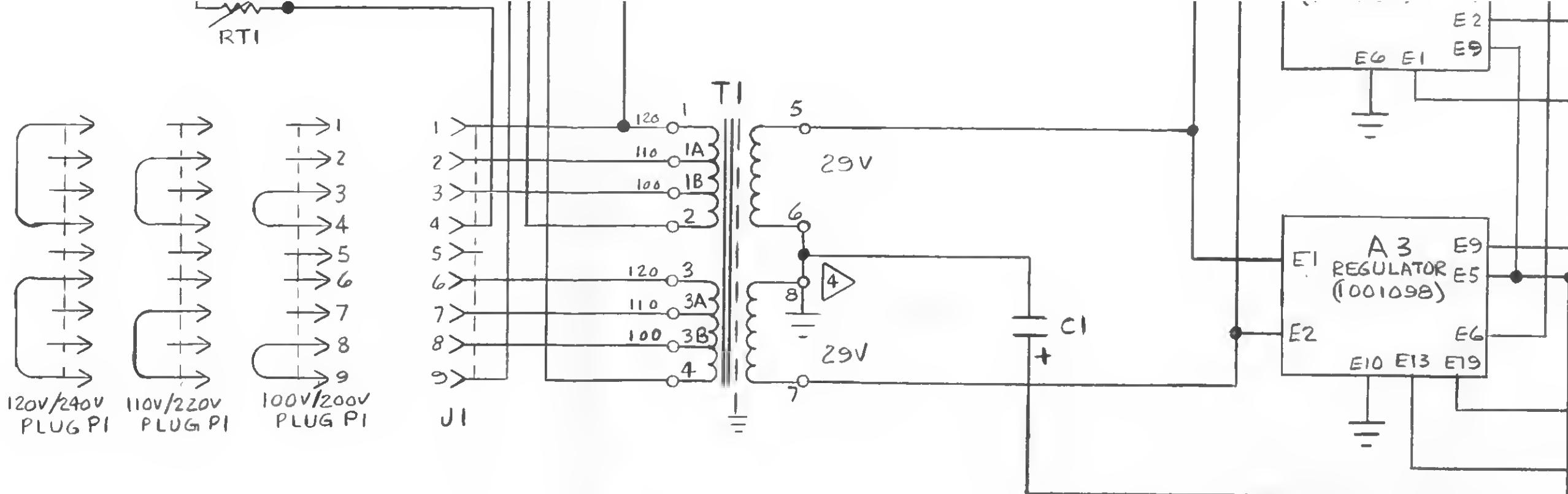
A7

A4

RF TO

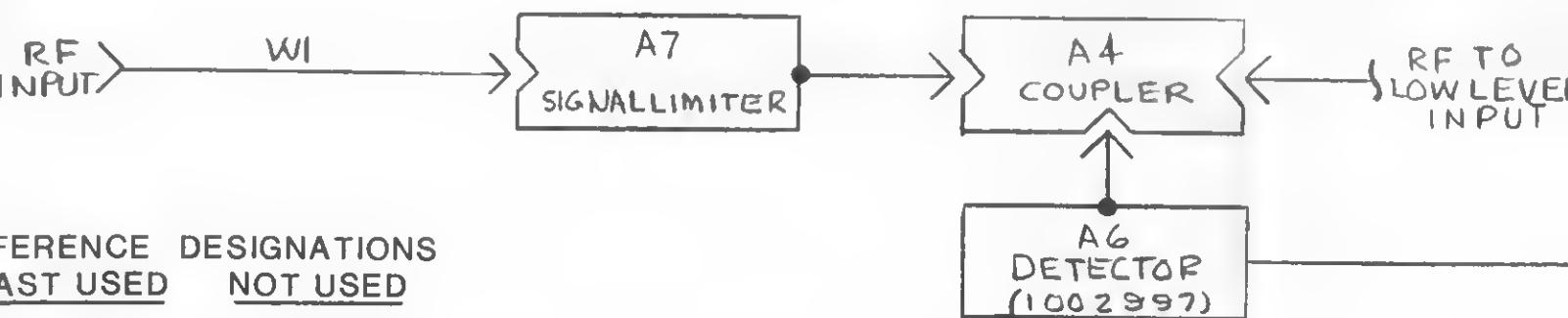
REDRAWN





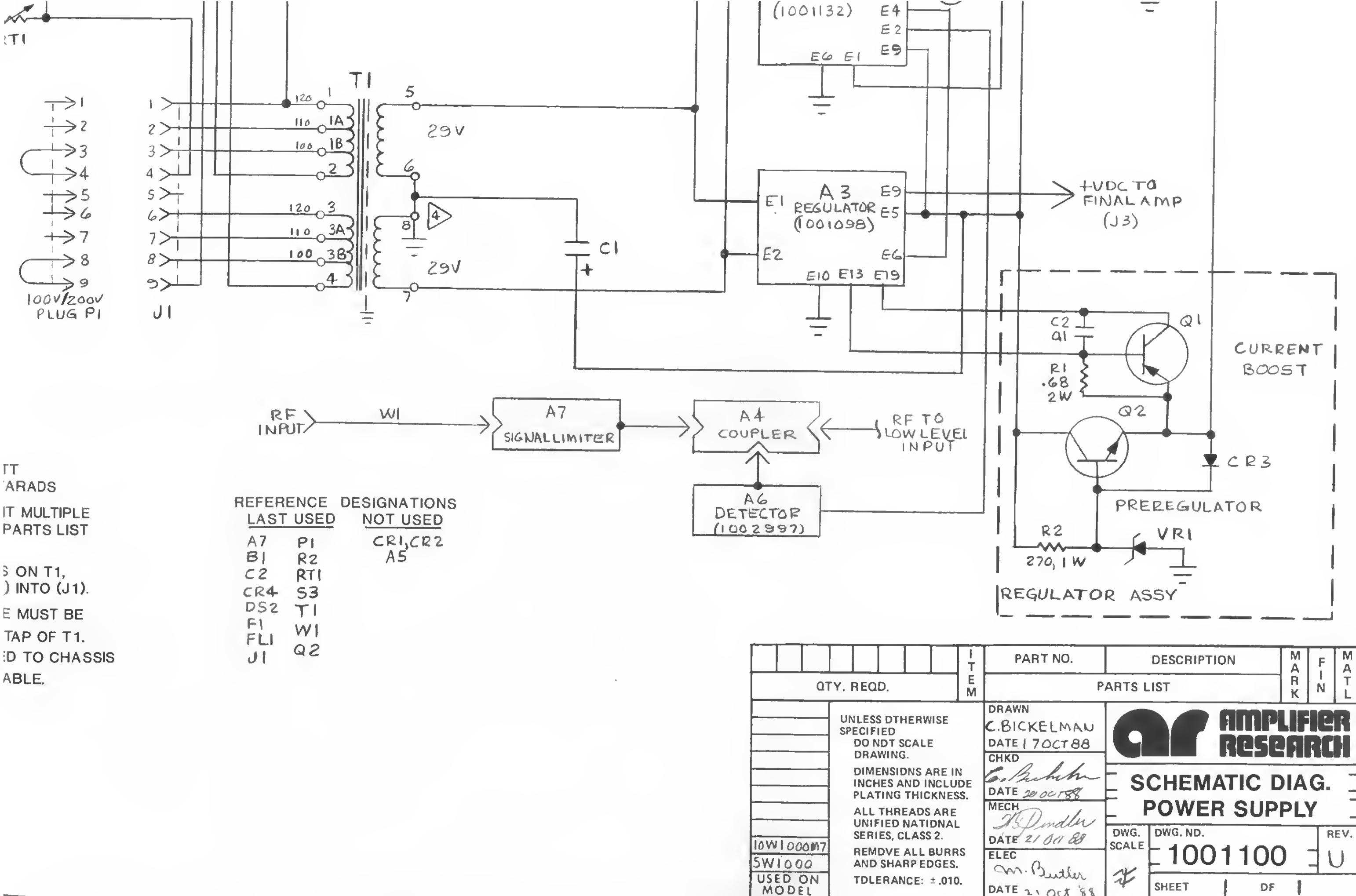
NOTES:

- 1.0 UNLESS OTHERWISE SPECIFIED:
RESISTOR VALUES ARE OHMS
RESISTOR RATINGS ARE 1/4 WATT
CAPACITOR VALUES ARE MICROFARADS
- 2.0 THIS SCHEMATIC MAY REPRESENT MULTIPLE ASSEMBLIES. SEE APPROPRIATE PARTS LIST FOR FINAL COMPONENT VALUES.
- 3.0 WHEN CHANGING PRIMARY TAPS ON T1,
PLUG APPROPRIATE JUMPER (P1) INTO (J1).
- 4.0 RETURN WIRE FROM C1 NEGATIVE MUST BE WIRED INDIVIDUALLY TO CENTER TAP OF T1.
CENTER TAP SHALL BE GROUNDED TO CHASSIS
USING SHORTEST WIRE PRACTICABLE.



REFERENCE		DESIGNATIONS
LAST USED		NOT USED
A7	P1	CR1,CR2
B1	R2	A5
C2	RT1	
CR4	S3	
DS2	T1	
F1	W1	
FL1		
J1	Q2	

UNLESS OTHERWISE
SPECIFIED
DO NOT SCALE
DRAWING.
DIMENSIONS ARE IN
INCHES AND INCLUDE
PLATING THICKNESS.
ALL THREADS ARE
UNIFIED NATIONAL
SERIES, CLASS 2.
REMOVE ALL BURRS
AND SHARP EDGES.
TOLERANCE: $\pm .010$.



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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1002875-502 REV: A U/M: EA DRAWING NO:
POWER SUPPLY AND HOUSING

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-DSGN
9010	1001100	0	SCHEMATIC DIAGRAM,POWER SUPPLY	EA	REF	ARC\1001100
5000	1002243-104-F2	-	PLATE,L.S.	EA	1.000	ARC\1002243
5010	1002243-103-F2	-	PLATE,R.S.	EA	1.000	ARC\1002243
5020	69074		MOUNTING FOOT,RUBBER,5/8 OD,5/8 HT,5/16 01A,7/16OP	EA	4.000	RUS\REC-2090S
5030	1002500-501	C	HARNESS ASSY,POWER SUPPLY	EA	1.000	
5040	1002869-501	0	PLATE ASSY,BASE	EA	1.000	
5040	1002869-501	8	PANEL ASSY,CONTROL	EA	1.000	
5040	66009		WIRE,TEFLON,16 AWG,STRANDED,BLACK	IN	6.500	
5040	69100		LUG,SHAKEPROOF,BENT,41/64 L, #6 STUD,DUAL HOLE	EA	1.000	HHS\1416-6
7100	11014		SCREW,MACH,PAN HO,CROSS-REC,S/S,6-32X.25	EA	1.000	
7100	11018		SCREW,MACH,PAN HO,CROSS-REC,ZN,6-32 X .38,TYPE SW	EA	14.000	
7100	11020		SCREW,MACH,PAN HO,CROSS-REC,S/S,6-32 X .50	EA	2.000	
7100	11064		SCREW,MACH,FLT HO,100 DEG,CROSS-REC,S/S,6-32X.38	EA	6.000	

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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1002500-50I REV: C U/M: EA DRAWING NO:
HARNESS ASSY,POWER SUPPLY

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-DSGN		
0010	I001100	U	SCHEMATIC DIAGRAM,POWER SUPPLY	EA	REF	ARC\I001100		
0010	I002870	-	WIRE LIST,P.S.	EA	REF	ARC\I002870		
0010	I002971-10I		HARNESS BOARD,POWER SUPPLY	EA	REF	ARC\I002971		
0100	I002823-509	8	REGULATOR ASSY	EA	1.000	ARC\I00I097	A1	
0110	I002485-50I	-	PROTECTION CIRCUIT ASSY	EA	1.000		A2	
0120	I002823-507	C	REGULATOR ASSY	EA	-	1.000	ARC\I00I097	A3
3100	57032		SWITCH,LIGHTED-ROCKER,W/O INDEP.LAMP CONTACT,DPST	EA	1.000	LTIGK5D-IL-WH-RCA	S1	
5000	41117		PIN,CONNECTOR	EA	3.000	CAM\460-3308-01-03	I2	
5010	69142		TERMINAL,RING,INSUL,#10 STUD,22-16 AWG	EA	2.000	TAB\RA-B77	I3	
5020	69145		TERMINAL,RING,INSUL,#10 STUD,16-14 AWG	EA	1.000	TAB\RB-B77	I8	
5030	66087		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STRAND,BLACK IN	A/R				
5030	66068		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STRAND,BROWN IN	A/R				
5030	66073		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STRAND,BLUE IN	A/R				
5030	66074		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STRAND,VIOL. IN	A/R				
5030	66075		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STRAND,GRAY IN	A/R				
5030	66076		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STRAND,WHITE IN	A/R				
5030	66077		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STR,WHT/BLK IN	A/R				
5030	66079		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STR,WHT/RED IN	A/R				
5030	66082		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STR,WHT/GRN. IN	A/R				
5030	66084		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STR,WHT/BLUE IN	A/R				
5030	66085	FT	WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STR,WHT/GRAY IN	A/R				
5030	69162		CABLE TIES,7/8"MAX BUNDLE DIA.4'L	EA	75.000	DEN\08432		

09:37:37 14 MAY 1990

AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1002872-501
REGULATOR ASSY

REV: 0 U/M: EA DRAWING NO: ARC\1002872

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-DSGN
0010	1001100	U	SCHEMATIC DIAGRAM,POWER SUPPLY	EA	REF	ARC\1001100
0400	27198		CAP,CERAMIC,0.1MF,+80-20%,100V,CHAR,Z5U	EA	1.000	MPC\EF104Z
0700	1N5061		0100E,RECTIFIER,1.5AMP,500V	EA	1.000	TEL\1N5061
2500	54509		TRANSISTOR,SWITCHING,PNP,100V,10A,30W	EA	1.000	TII\TIP-34C
2510	54514		TRANSISTOR,SWITCHING,NPN,100V,10A,125W	EA	1.000	TII\TIP-142
2700	55715-R600J		RESISTOR,FX0,WW,0.68,5%,2W,TYPE BWH	EA	1.000	R1
2710	55514-2700J		RESISTOR,FX0,CARBON COMP,270,5%,1W	EA	1.000	R2
4000	1N4752A		0100E,ZENER,33V,5%,1W	EA	1.000	MOT\1N4752A
5000	1002051-101	C	BRACKET,TRANSISTOR MOUNTING	EA	1.000	ARC\1002051
5010	53008		TERMINAL STRIP,7 TERMINAL	EA	1.000	SPC\LTS-207
5020	69091		INSULATOR,HO ANODIZED,TYPE TO-220,.950 L,.500 W	EA	2.000	THM\4778A
5030	77064		COMPOUND, THERMAL JOINT, TYPE 120	EA	A/R	WAK\120-S
5040	69100		LUG,SHAKEPROOF,BENT,41/64 L,#6 STUO,DUAL HOLE	EA	2.000	HHS\1416-6
5050	11011		SCREW,MACH,PAN HO,CROSS-REC,S/S,4-40 X .38	EA	2.000	
5060	11018		SCREW,MACH,PAN HO,CROSS-REC,ZN,6-32 X .38,TYPE SW	EA	2.000	
5070	12010		WASHER,FLAT,S/S,#4,.250 OD X .125 ID X .028 THK	EA	2.000	MS-15795-803
5080	12000		WASHER,LOCK,INT TOOTH,S/S,#4	EA	2.000	
5090	12037		WASHER,SHLR,N,.232 OD X .115 ID X .047 SHLQ.THK.	EA	2.000	REL\NY-04-040
5100	65073		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STRAND,BLUE	IN	A/R	
5110	66076		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STRAND,WHITE	IN	A/R	
5120	66079		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STR,WHT/RED	IN	A/R	
5130	66084		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STR,WHT/BLUE	IN	A/R	
5140	66069		WIRE,IRRADIATED,PVC,TYPE 18,22 AWG,19 STRAND,RED	IN	A/R	
5150	66117		TUBING,SHRINKABLE,BLACK,.187 EXP,.093 REC	IN	6.000	

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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1002868-501
PLATE ASSY, BASE

REV: D U/M: EA DRAWING NO:

SEQ	PART NUMBER	REV	DESCRIPTION	U/N	QUANTITY-PER DRAWING	NUMBER	CRCT-DSGN
0010	1001100	U	SCHEMATIC DIAGRAM,POWER SUPPLY	EA	REF	ARC\1001100	
0200	37011		FAN,SHADEO POLE,120V,50/60HZ,106CFM	EA	1.000	PAP\4600N	8I
1400	35019		FILTER,LINE,6 AMP	EA	1.000	COR\6EF1	FL1
1500	41105		TERMINAL,.093 OIA,CRIMP TYPE,FEMALE	EA	8.000	NOL\02-09-1118	JI
1500	41131		CONNECTOR,RECEPT,W/EARS & DETENT LOCK,9 CKT,MALE	EA	1.000	NOL\03-09-1092	JI
2200	1003909-501	A	CONNECTOR ASSY,VOLTAGE SELECT	EA	1.000	ARC\1003909	P1
3000	56075		RESISTOR,CURRENT LIMITER,2.5 OHM,25%,25 DEG C,8A	EA	1.000	KCC\CLS-30	RT1
3100	57044		SWITCH,SLIDE,DPOT,6A,125VAC	EA	1.000	SWC\46256LFE	S2
3200	1001066-101	F	XFMR,PWR,120/240,57 VAC,5.0 A	EA	1.000	ARC\1001066	T1
4500	73002		FUSEMOLOER,MKP	EA	1.000	LIF\342012	XF1
5000	1000033-101	C	SCREEN,AIR INTAKE	EA	1.000	ARC\1000033	
5000	1002243-111-F2	L	COVER,BOTTON	EA	1.000	ARC\1002243	
5000	1002872-501	O	REGULATOR ASSY	EA	1.000	ARC\1002872	
5000	69119		RIVET,GRIP-TITE,A,1/8"OIA,1/8"MAT'L THICKNESS	EA	2.000	GRA\4X641	
5000	69120		RIVET,GRIP-TITE,A,1/8"OIA,1/8-1/4"MAT'L THICKNESS	EA	2.000	GRA\5X520	
5000	69157		TERMINAL,INSUL,STANDOFF,6-32 THD	EA	1.000	USC\1417-4-5	
7100	11014		SCREW,MACH,PAN HD,CROSS-REC,S/S,6-32X.25	EA	1.000		
7100	11021		SCREW,MACH,PAN HD,CROSS-REC,6-32 X .62	EA	6.000		
7100	11028		SCREW,MACH,PAN HD,CROSS-REC,S/S,8-32 X .38	EA	4.000		
7300	13004		NUT,HEX,S/S,6-32,.250AF	EA	7.000		
7300	13006		NUT,HEX,S/S,6-32,.343AF	EA	4.000		
7500	12001		WASHER,LOCK,INT TOOTH,S/S,#6	EA	8.000		
7500	12002		WASHER,LOCK,INT TOOTH,S/S,#8	EA	4.000		
7500	12011		WASHER,FLAT,S/S,#6,.312 OD	EA	7.000		

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AMPLIFIER RESEARCH

*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 2

BILL NO: 1002868-501
PLATE ASSY, BASE

REV: D U/M: EA DRAWING NO:

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-DSGN
7500	12012		WASHER, FLAT, S/S, #8, .375 00	EA	\$ 0.000	

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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1002869-501
PANEL ASSY, CONTROL

REV: B U/M: EA DRAWING NO:

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING	DRAWING NUMBER	CRCT-DSGN
0010	1001100	U	SCHEMATIC DIAGRAM,POWER SUPPLI	EA	REF	ARC\1001100	
0100	25022		COUPLER,DIRECTIONAL,1-1000MHZ,100B	EA	1.000	EMM\LOCK-1010B	A4
0110	1001203-501	C	DETECTOR ASSEMBLY	EA	1.000	ARC\1001203	A6
0120	1002142-501	A	SIGNAL LIMITER ASSY	EA	1.000	ARC\1002142	A7
0400	27095		CAP,ELECT,9000UF,.40V	EA	1.000	MAL\CGS902U040R4C	C1
0700	IN5061		0100E,RECTIFIER,1.5AMP,600V	EA	1.000	TEL\IN5061	CR4
1000	33003		LEO,REO,T1 3/4(5mm)	EA	1.000	H-P\HLMP-3001-009	0S2
3110	57029		SWITCH,PB,MOVEMENT,SPST(N.O.)	EA	1.000	A-S\MSPS-103C-2	S3
5000	1000532-101-F1	O	PANEL,TRIM	EA	1.000	ARC\1000532	
5000	1002207-101	B	NAME PLATE,LOGO,DIE CAST	EA	1.000	ARC\1002207	
5000	1002243-106	G	PANEL,FRONT	EA	1.000	ARC\1002243	
5000	1002243-110-F2-M2	-	PANEL,CONN "N"	EA	1.000	ARC\1002243	
5000	14001		FASTENER,TINNERMAN,C12005-017-4	EA	2.000		
5000	20000	-	CABLE ASSY,COAX,RG-188A/U,BNC,N,12.0	EA	1.000	ARC\1002494	
5000	69071		CLIP,COMPONENT,1.00" L,1.375" O1A,1.439" HT	EA	2.000	STM\4511-137-1002C	
5000	69119		RIVET,GRIP-TITE,A,1/8"O1A,1/8"MAT'L THICKNESS	EA	4.000	GRA\41641	
7100	11018		SCREW,MACH,PAN HO,CROSS-REC,ZN,6-32 X .38,TYPE SW	EA	7.000		
7100	11064		SCREW,MACH,FLT HO,100 DEG,CROSS-REC,S/S,6-32X.38	EA	2.000		
7100	11067		SCREW,MACH,FLT HO,100 DEG,CROSS-REC,S/S/,6-32X1.00	EA	2.000		
7300	13004		NUT,HEX,S/S,6-32,.250AF	EA	2.000		
7500	12001		WASHER,LOCK,INT TOOTH,S/S,#6	EA	2.000		

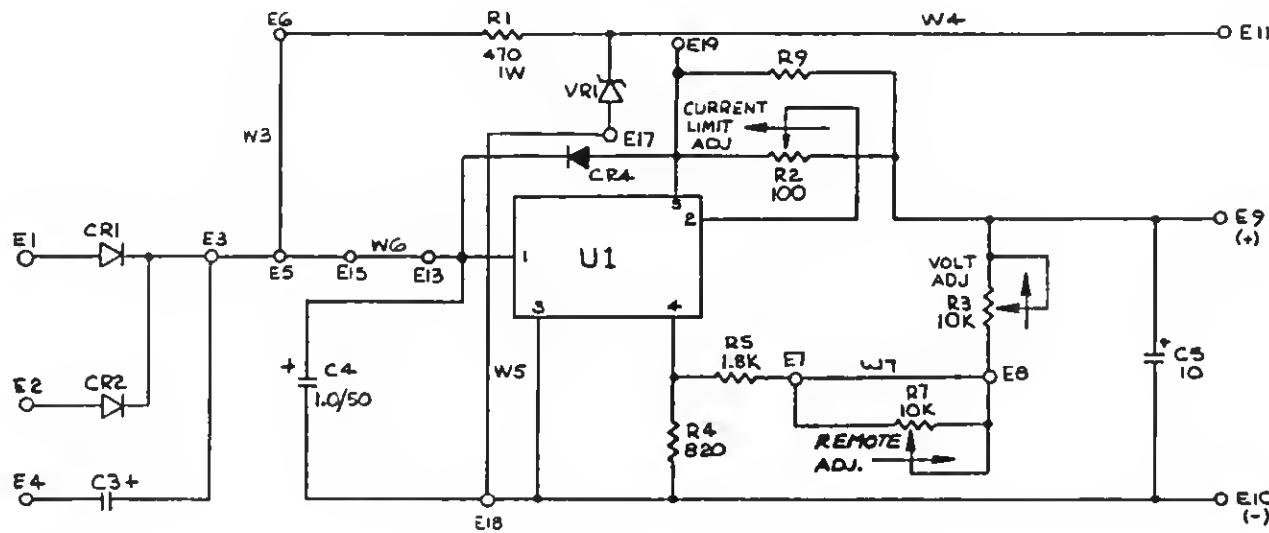
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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1002142-501 REV: A U/M: EA DRAWING NO: ARC\1002142
SIGNAL LIMITER ASSY

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING	NUMBER	CRCT-DSGN	
0700	IN4448		DIODE, SIGNAL, 75V PIV	EA	2.000	FCH\IN4448	CRI ,CR2	
1500	UG-625B/U		CONN, COAX, BULKHO RECEPT, TYPE BNC(F)	EA	1.000	AMH\UG-625B/U	J1	
2200	41013		CONNECTOR, COAX, BNC, PLUG, RG-188A/U	EA	1.000	KIN\KC-59-152	PI	
4200	66151		WIRE, IRRADIATED, PVC, 26 AWG, SOLID, RED	IN	A/R		WI	
4200	66152		WIRE, IRRADIATED, PVC, 26 AWG, SOLID, BLACK	IN	A/R		WI	
5000	1002464-101	-	CAN, MODIFIED	EA	-	1.000	ARC\1002464	I
5010	80002		COVER, HU5365 CAN	EA	1.000	HUC\HU5365CAST-HT0 2		



ECN	DATE	REV
161681	—	
20011	A	
19272	B	
13AUG04	C	
15May06	D	
01AUG05	E	
495	31JUL06	F
1706	21NOV06	G

NOTES:

- 1.0 UNLESS OTHERWISE SPECIFIED:
RESISTOR VALUES ARE OHMS
RESISTOR RATINGS ARE 1/4 WATT
CAPACITOR VALUES ARE MICROFARADS
- 2.0 THIS SCHEMATIC MAY REPRESENT MULTIPLE
ASSEMBLIES. SEE APPROPRIATE PARTS LIST
FOR FINAL COMPONENT VALUES.

REFERENCE DESIGNATIONS
LAST USED NOT USED

C5	U1	R8, R6
CR4	VR1	W1, W2
E19	W7	CR3
R9		C1, C2

		ITEM	PART NO.	DESCRIPTION	M	A	F	M
QTY. REQD.			PARTS LIST			AR	MARK	FIN
		UNLESS OTHERWISE SPECIFIED DO NOT SCALE DRAWING.	DRAWN J. VOGELBERG	DATE 16 JUN 81	 AMPLIFIER RESEARCH			
		DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.	CHKD <i>Sh</i>	DATE 15 NOV 88	SCHEMATIC DIAG			
		ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.	MECH <i>St. Doneller</i>	DATE 15 NOV 88	REGULATOR MPLV			
		REMOVE ALL BURRS AND SHARP EDGES.	ELEC	DATE	DRAWL SCALE	DRAWL NO.	REV.	
		TOLERANCE: $\pm .018$.				1001507	G	
GEN USE	USED ON MODEL				SHEET 1 OF 1			

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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1002823-509
REGULATOR ASSY

REV: B U/M: EA DRAWING NO: ARC\1001097

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-OSGN
0010	1001507	G	SCHEMATIC DIAGRAM,REGULATOR ASSY	EA	REF	ARC\1001507
0410	27058		CAP,ELECT,10UF,50V, +/-20%,RADIAL	EA	1.000	PAN\CECAIH0D0
0420	27063		CAP,ELECT,10UF,50V, +/-20%,AXIAL	EA	1.000	PAN\CECEBIHUI00
0700	IN5401		DIODE,3AMP,100V PIV	EA	2.000	SSM\IN5401
0710	IN5061		DIODE,RECTIFIER,1.5AMP,600V	EA	1.000	TEL\IN5061
2700	55514-4700J		RESISTOR,FIXD,,CARBON COMP,470,5%,1W	EA	1.000	A-816B4715
2710	55923		RES,VAR,CERMET,MULTITURN,SIDE A0J,100,10%,1/2W	EA	1.000	BOR\3299Z-1-101
2720	55930		RESISTOR,VARIABLE,COMP,10K,10%,1/4W	EA	1.000	CTS\U201R1038
2730	55612-8200J		RESISTOR,FIXD,METAL FILM,820,5%,1/4-I/2W	EA	1.000	TRW\GP55-8200+/-5%
2740	55612-I80IJ		RESISTOR,FIXD,METAL FILM,I.8K,5%,1/4-I/2W	EA	1.000	TRW\GP55-I80I+/-5%
2750	55715-R680J		RESISTOR,FIXD,WW,0.68,5%,2W,TYPE BWH	EA	1.000	
3700	60033		INTEGRATED CIRCUIT,LINEAR,POS.,A0J.VOLTAGE,2A	EA	1.000	SGS\VL200CV
4000	IN5363A		DIODE,ZENER,30V,10%,5W	EA	1.000	SSM\IN5363A
4200	66047		WIRE,BUSS,TINNEO COPPER,22 AWG	IN	5.500	ALP\9022
						W3 ,W4
						W5 ,W7
						W8 ,W9
4200	66139		TUBING,TEFLON,NAT'L COLOR,20AWG,.034ID,.012WALL THK IN	A/R	ALP\TFT200 20AWG	W3 ,W4
						W5 ,W7
						W8 ,W9
5000	1001096-10I	M	FW8,REGULATOR	EA	1.000	ARC\1001096
5010	I001099-10I	B	BRACKET,MOUNTING,MPLV REGULATOR	EA	1.000	ARC\1001099
5020	69175		MOUNTING TAB,NAT'L COLOR NYLON,21/32 O/A,3/8 W	EA	1.000	PLM\VA-30-167
5020	77064		COMPOUND, THERMAL JOINT, TYPE 120	EA	A/R	WAK\120-S
7100	11011		SCREW,MACH,PAN HD,CROSS-REC,S/S,4-40 X .38	EA	1.000	
7100	11020		SCREW,MACH,PAN HD,CROSS-REC,S/S,6-32 X .50	EA	4.000	
7100	11064		SCREW,MACH,FLT HD,100 DEG,CROSS-REC,S/S,6-32X.38	EA	1.000	

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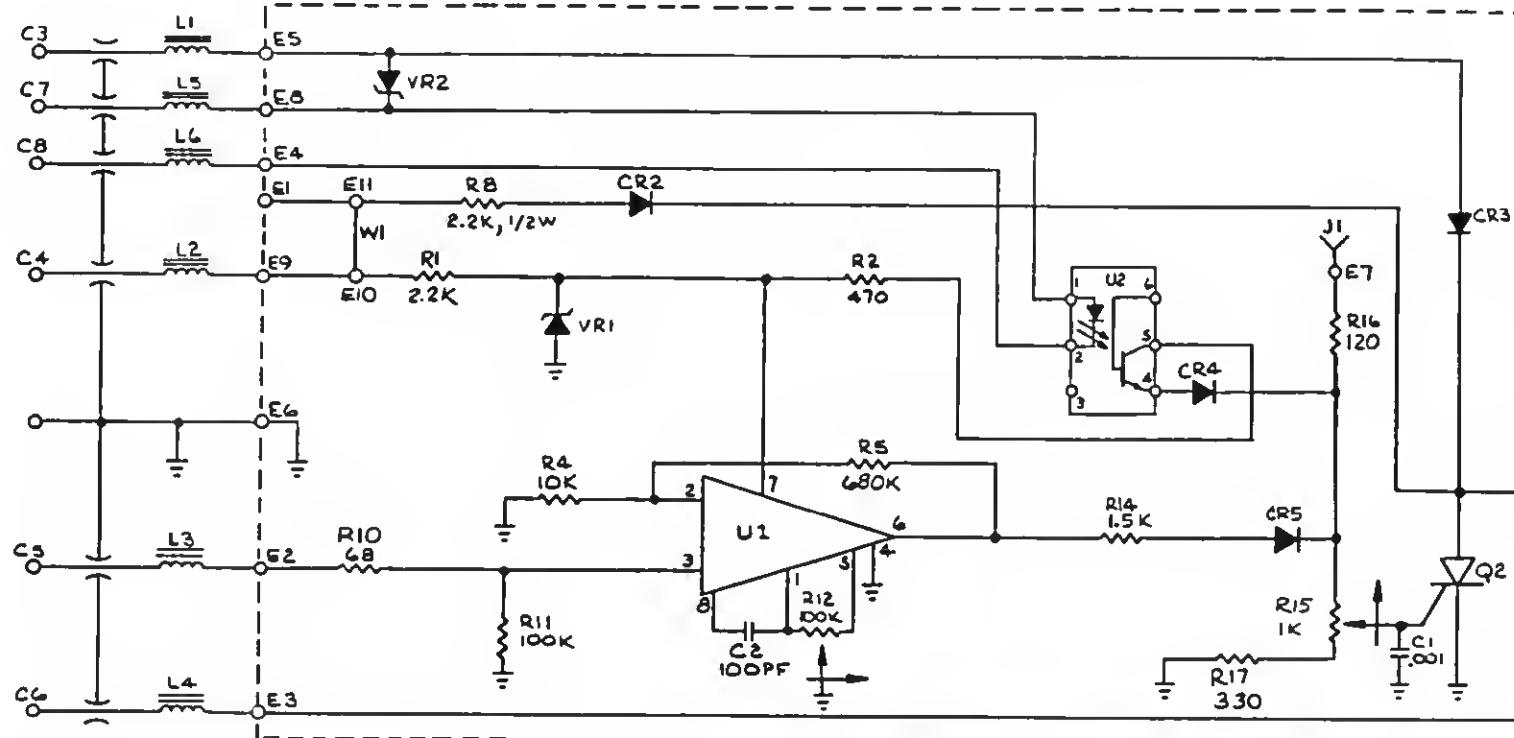
AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 2

BILL NO: I002823-509
REGULATOR ASSY

REV: B U/M: EA DRAWING NO: ARC\1001097

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-DSGN
7300	13003		NUT,HEX,S/S,#-40,.187AF	EA	1.000	
7300	13004		NUT,HEX,S/S,6-32,.250AF	EA	5.000	
7500	12000		WASHER,LOCK,INT TOOTH,S/S,#4	EA	1.000	
7500	12001		WASHER,LOCK,INT TOOTH,S/S,#6	EA	5.000	
7500	12010		WASHER,FLAT,S/S,#4,.250 00 X .125 ID X .028 THK	EA	1.000	\MS-15795-803
7500	12011		WASHER,FLAT,S/S,#6,.312 00	EA	-	5.000
7500	12024		WASHER,FLAT,B/ZN PLTG,.312 00 X .164 ID X .125 THK	EA	4.000	\S785-M01-F21-.164



ECN	DATE	REV
1	12Jun81	G
2	2468	H
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4	2468	J
5	2468	K
6	2468	L
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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1002465-501 REV: - U/M: EA DRAWING NO:
PROTECTION CIRCUIT ASSY

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-DSGN
0010	1001132	M	SCHEMATIC DIAGRAM,PROTECTION CIRCUIT	EA	REF	ARC\1001132
5000	1001099-101	B	BRACKET,MOUNTING,MPLV REGULATOR	EA	1.000	ARC\1001099
5000	1002324-501	E	PRINTED WIRING BOARD ASSY	EA	1.000	ARC\1001134
5000	69175		MOUNTING TAB,NAT'L COLOR NYLON,21/32 0/A,3/8 W	EA	1.000	PLM\A-30-167
7100	11020		SCREW,MACH,PAN HD,CROSS-REC,S/S,6-32 X .50	EA	4.000	
7110	11064		SCREW,MACH,FLAT HD,100 DEG,CROSS-REC,S/S,6-32X.38	EA	1.000	
7300	13004		NUT,HEX,S/S,6-32,.250AF	EA	5.000	
7500	12001		WASHER,LOCK,INT TOOTH,S/S,#6	EA	5.000	
7500	12011		WASHER,FLAT,S/S,#6,.312 00	EA	5.000	
7500	12024		WASHER,FLAT,B/ZN PLT6,.312 00 X .164 ID X .125 THK EA		4.000	\S785-M01-F21-.164

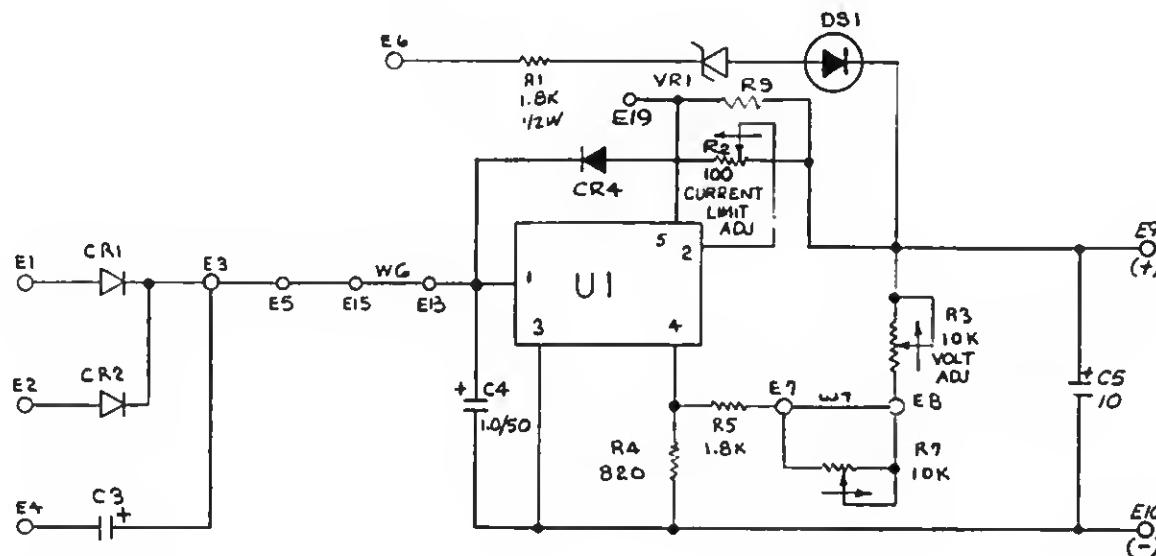
09:37:56 14 MAY 1990

AMPLIFIER RESEARCH
* * * SINGLE LEVEL BILL OF MATERIAL LISTING * * *

REPORT: E0056 PAGE: 1

BILL NO: 1002824-501 REV: E U/M: EA DRAWING NO: ARC\1001134
PRINTED WIRING BOARD ASSY

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-OSGN
0010	1001132	M	SCHEMATIC DIAGRAM,PROTECTION CIRCUIT	EA	REF	ARC\1001132
0400	27179		CAP,CERAMIC,1000PF,10%,600/1000V,CHAR.Z5F	EA	1.000	MPC1GB-102K C1
0410	27181		CAP,CERAMIC,100PF,10%,600/1000V,CHAR.S3N	EA	1.000	MUE1GH101K C2
0700	IN4448	.	0100E,SIGNAL,75V F1V	EA	3.000	FCH\IN4448 CR2 ,CR4 CR5
0710	IN5061		0100E,RECTIFIER,1.5AMP,600V	EA	1.000	TEL\IN5061 CR3
2500	54543		SCR,200V,4.0A	EA	1.000	POW\CR2AMB Q2
2700	55612-2201J		RESISTOR,FXO,METAL FILM,2.2K,5%,1/4-1/2W	EA	2.000	TRW\GP55-2201+/-5% R1 ,R8
2710	55612-4700J		RESISTOR,FXO,METAL FILM,470,5%,1/4-1/2W	EA	1.000	TRW\GP55-4700+/-5% R2
2720	55612-1002J		RESISTOR,FXO,METAL FILM,10K,5%,1/4-1/2W	EA	1.000	TRW\GP55-1002+/-5% R4
2730	55612-6803J		RESISTOR,FXO,METAL FILM,680K,5%,1/4-1/2W	EA	1.000	TRW\GP55-6803+/-5% R5
2750	55612-68R0J		RESISTOR,FXO,METAL FILM,68,5%,1/4-1/2W	EA	1.000	TRW\GP55-68R0+/-5% R10
2760	55612-1003J		RESISTOR,FXO,METAL FILM,100K,5%,1/4-1/2W	EA	1.000	TRW\GP55-1003+/-5% R11
2770	55933		RESISTOR,VARIABLE,100K,10%,1/4W	EA	1.000	CTS\U201R104B R12
2780	55612-1501J		RESISTOR,FXO,METAL FILM,1.5K,5%,1/4-1/2W	EA	1.000	TRW\GP55-1501+/-5% R14
2790	55928		RESISTOR,VARIABLE,COMP,1K,10%,1/4W	EA	1.000	CTS\U201R102B R15
2800	55612-3300J		RESISTOR,FXO,METAL FILM,330,5%,1/4-1/2W	EA	1.000	TRW\GP55-3300+/-5% R17
2810	55612-1200J		RESISTOR,FXO,METAL FILM,120,5%,1/4-1/2W	EA	1.000	TRW\GP55-1200+/-5% R16
3700	60008		INTEGRATED CIRCUIT,LINEAR,OP.AMP.	EA	1.000	RCA\CA3130T U1
3710	60001		OPTOCOUPLER/ISOLATOR,TRANSISTOR OUTPUT STILE 1	EA	1.000	MOT\4N27 U2
4000	IN52398		0100E,ZENER,9.1V,5%,500MW	EA	1.000	NJS\IN52398 VR1
4010	IN52488		0100E,ZENER,18V,5%,500MW	EA	1.000	MOT\IN52488 VR2
4500	73011		SOCKET,1.C.,8 PIN,ROUND	EA	1.000	CIN\8ICS XU1
4510	73009		SOCKET,1.C.,6 PIN	EA	1.000	CAM\703-1306010410 XU2
5000	1001133-101	K	PWB,REGULATOR,MPLY	EA	1.000	1



ECN	DATE	REV
-	1950-78	-
-	2650-78	A
-	3550-80	C
-	1650-81	D
-	2450-81	E
-	4050-83	F
-	1540-84	G
-	1540-85	H
-	1540-85	J
-	1540-86	K
1700	1540-88	L

REFERENCE DESIGNATIONS

LAST USED	NOT USED
C5	R9
CR4	U1
DS1	VRI
E19	W1 - W5
E7	CR3
E8	E12 THRU E18
E9	C1, C2

ITEM	PART NO.	DESCRIPTION	MARK	FIN	MATL
1	DRAWN	W4046			
2	DATE	19 JUN 78			
3	CMKO	<i>St</i>			
4	DATE	15 NOV 88			
5	MECH	<i>90°</i> <i>0.010</i>			
6	DATE	15 NOV 88			
7	ELEC				
8	DWG. NO.	1001098	L		
9	SCALE				
10	DATE				
11	W.H.F				
12	SHEET				
13	OF				

SCHEMATIC DIAG
REGULATOR MPLV

09:38:03 14 MAY 1990

AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1002B23-507
REGULATOR ASSY REV: C U/M: EA DRAWING NO: ARC\1001097

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-OSGN
0010	1001098	L	SCHEMATIC DIAGRAM,REGULATOR ASSY	EA	REF	ARC\1001098
0410	2705B		CAP,ELECT,1UF,50V, +/-20%,RA01AL	EA	1.000	PAN\CECEA1H010 C4
0420	27063		CAP,ELECT,10UF,50V, +/-20%,A01AL	EA	1.000	PAN\CECEB1H0100 C5
0700	IN5401		0100E,3AMP,100V PIV	EA	2.000	SSM\IN5401 CR1 ,CR2
0710	IN5061		0100E,RECTIFIER,1.5AMP,600V	EA	1.000	TEL\IN5061 CR4
1000	33002		LEO,REQ,WIDE-ANGLE,T1(3mm)	EA	1.000	H-P\HLMP-1002 OS1
2700	55612-1B01J		RESISTOR,FX0,METAL FILM,1.6K,5%,1/4-1/2W	EA	2.000	TRW\GP55-1B01+/-5% R1 ,R5
2710	55923		RES,VAR,CERMET,MULTITURN,S10E ADJ,100,10%,1/2W	EA	1.000	BOR\3299Z-1-101 R2
2720	55930		RESISTOR,VARIABLE,COMP,10K,10%,1/4W	EA	1.000	CTS\U201R103B R3
2730	55612-B200J		RESISTOR,FX0,METAL FILM,820,5%,1/4-1/2W	EA	1.000	TRW\GP55-B200+/-5% R4
2740	5571B-R200J		RESISTOR,FX0,WW,0.2,5%,5W	EA	1.000	OHM\B0055 R9
3700	60033		INTEGRATED CIRCUIT,LINEAR,POS.,A0J.VOLTAGE,2A	EA	1.000	SGS\L200CV U1
4000	IN5239B		0100E,ZENER,9.1V,5%,500MW	EA	1.000	NJS\IN5239B VR1
4200	66047		WIRE,BUSS,TINNEO COPPER,22 AWG	IN	3.000	ALP\9022 W7 ,WB W9
4200	66139		TUBING,TEFLON,NAT'L CLR,20AWG,.03410,.012WALL THK IN A/R		ALP\TFT200 20AWG	W7 ,WB W9
5000	1001096-101	M	PWB,REGULATOR	EA	1.000	ARC\1001096
5010	1001099-101	B	BRACKET,MOUNTING,MPLV REGULATOR	EA	1.000	ARC\1001099
5020	69175		MOUNTING TAB,NAT'L CLR MILUN,21/32 0/A,3/8 W	EA	1.000	PLM\A-30-167
5020	77064		COMPOUND, THERMAL JOINT, TYPE 120	EA	A/R	WAK\120-S
7100	11011		SCREW,MACH,PAN HO,CROSS-REC,S/S,4-40 X .38	EA	1.000	
7100	11020		SCREW,MACH,PAN HO,CROSS-REC,S/S,6-32 X .50	EA	4.000	
7100	11064		SCREW,MACH,FLT HO,100 DEG,CROSS-REC,S/S,6-32X.38	EA	1.000	
7300	13003		NUT,HEX,S/S,4-40,.187AF	EA	1.000	

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AMPLIFIER RESEARCH
* * * SINGLE LEVEL BILL OF MATERIAL LISTING * * *

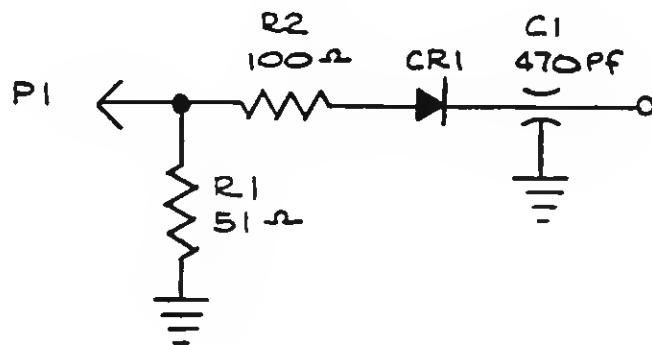
REPORT: E0056 PAGE: 2

BILL NO: I002823-507
REGULATOR ASSY

REV: C U/M: EA DRAWING NO: ARC\1001097

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-DSGN
7300	13004		NUT,HEX,S/S,6-32,.250AF	EA	5.000	
7500	12000		WASHER,LOCK,INT TOOTH,S/S,#4	EA	1.000	
7500	12001		WASHER,LOCK,INT TOOTH,S/S,#6	EA	5.000	
7500	12010		WASHER,FLAT,S/S,#4,.250 00 X .125 10 X .028 THK	EA	1.000	\MS-15795-803
7500	12011		WASHER,FLAT,S/S,#6,.312 00	EA	5.000	
7500	12024		WASHER,FLAT,B/ZN PLTG,.312 00 X .164 10 X .125 THK	EA	4.000	\S785-M01-F21-.164

ECN	DATE	REV
—	17 MAR 87	—



		ITEM	PART NO.	DESCRIPTION		MARK	FIN	MATERIAL
QTY. REQD.			PARTS LIST					
<p>UNLESS OTHERWISE SPECIFIED DO NOT SCALE DRAWING.</p> <p>DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.</p> <p>ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.</p> <p>REMOVE ALL BURRS AND SHARP EDGES.</p> <p>TOLERANCE: $\pm .010$.</p>	<p>DRAWN J. VOGENBERG DATE 17 MAR 87</p> <p>CHKD DATE 15 Nov 88</p> <p>MECH DATE 15 Nov 88</p> <p>ELEC</p>		<p>AR AMPLIFIER RESEARCH</p> <p>SCHEMATIC DIAG. DETECTOR ASSY</p>		<p>DWG. NO. 1002997</p> <p>REV. —</p>			
	GEN. USE	DATE	SHEET / OF /					
	USED ON MODEL							

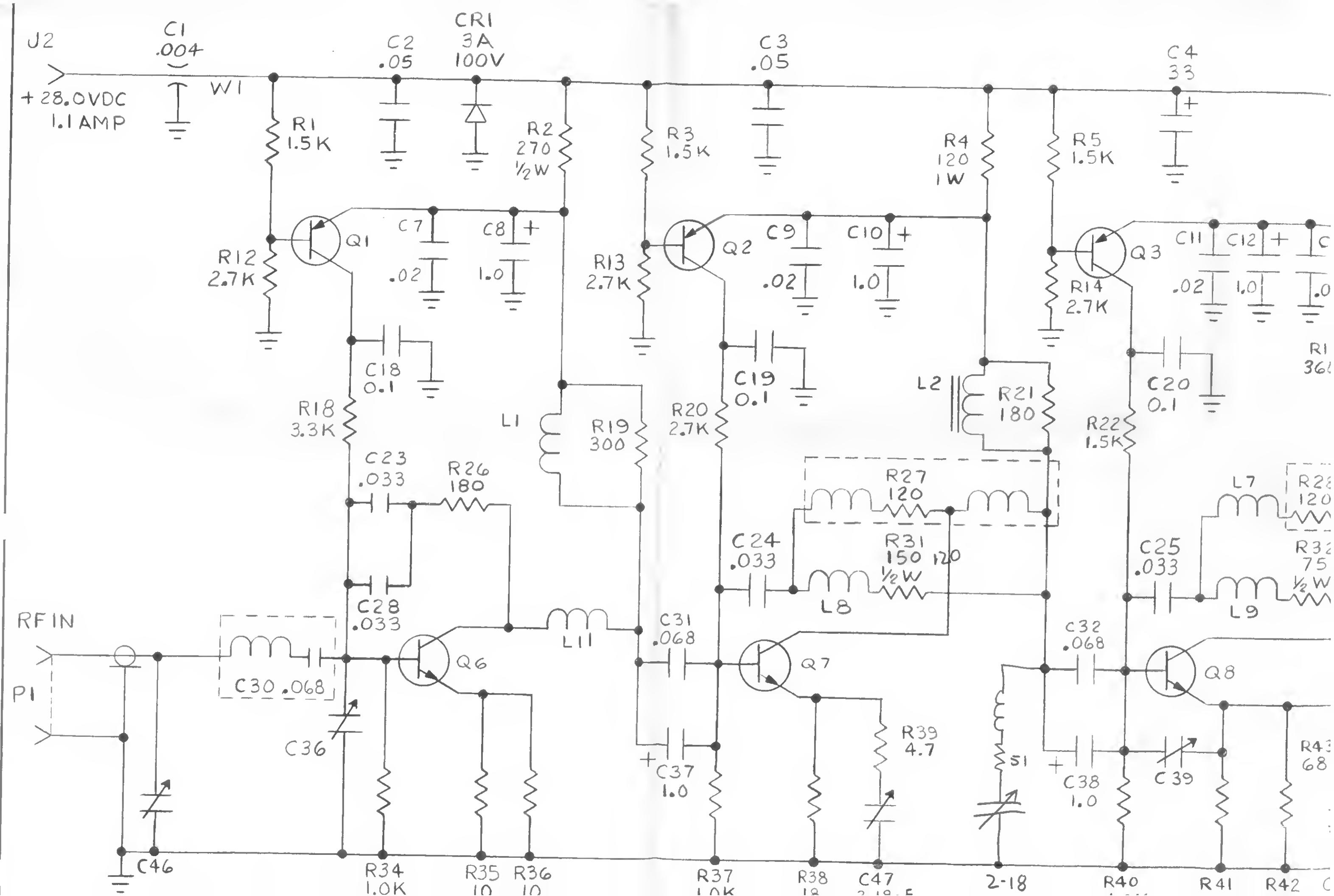
09:38:08 14 MAY 1990

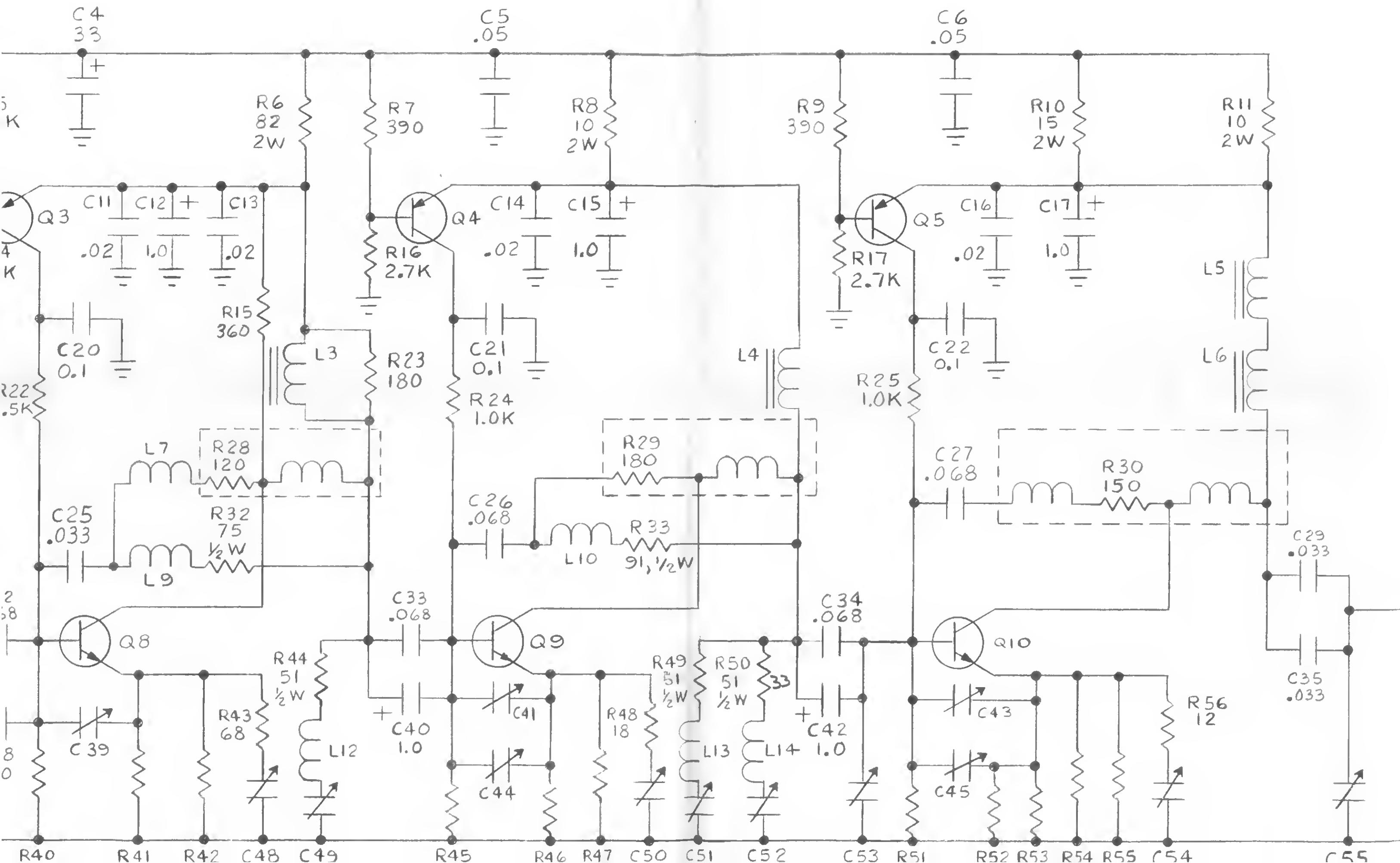
AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

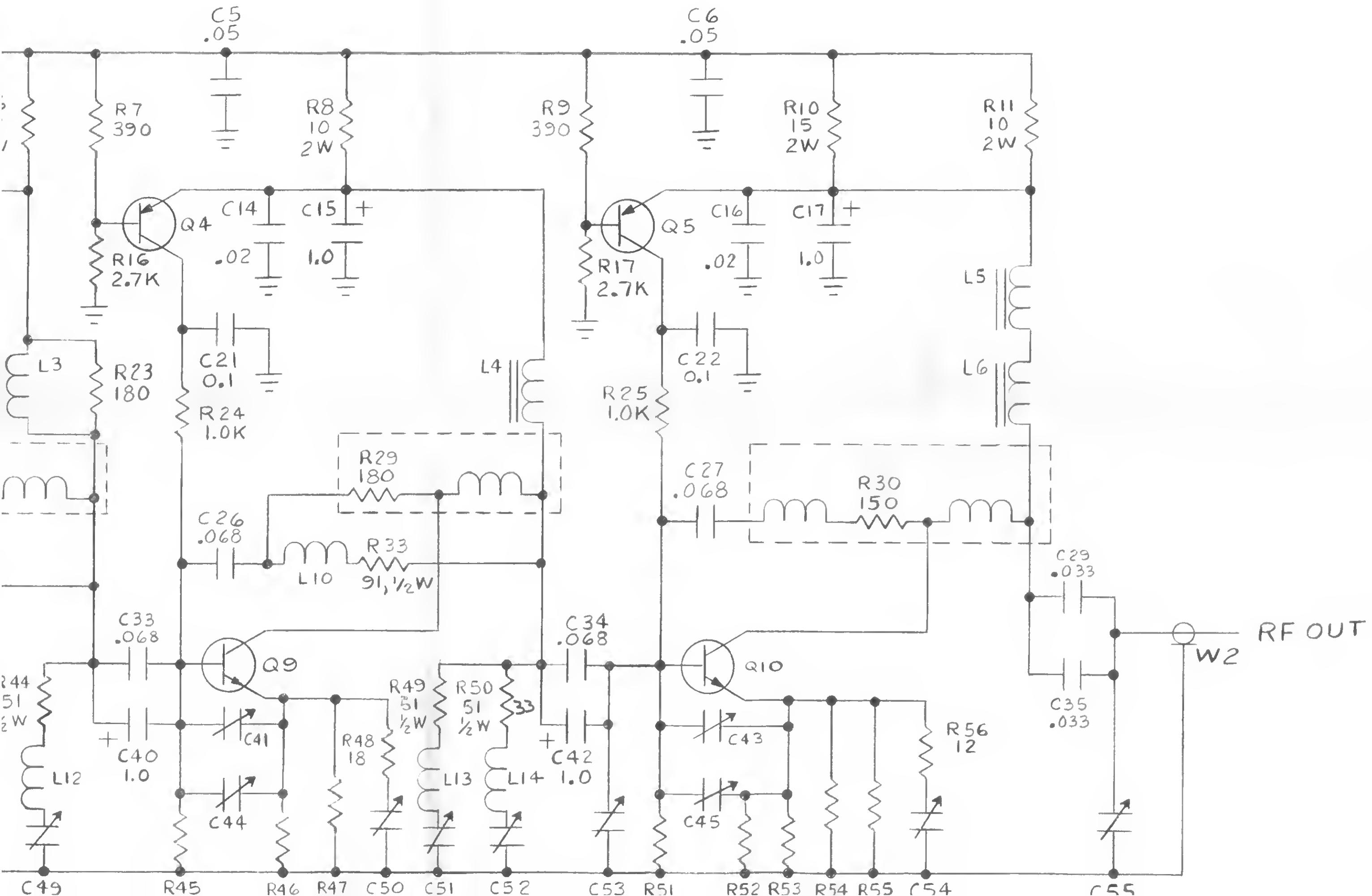
REPORT: E0056 PAGE: 1

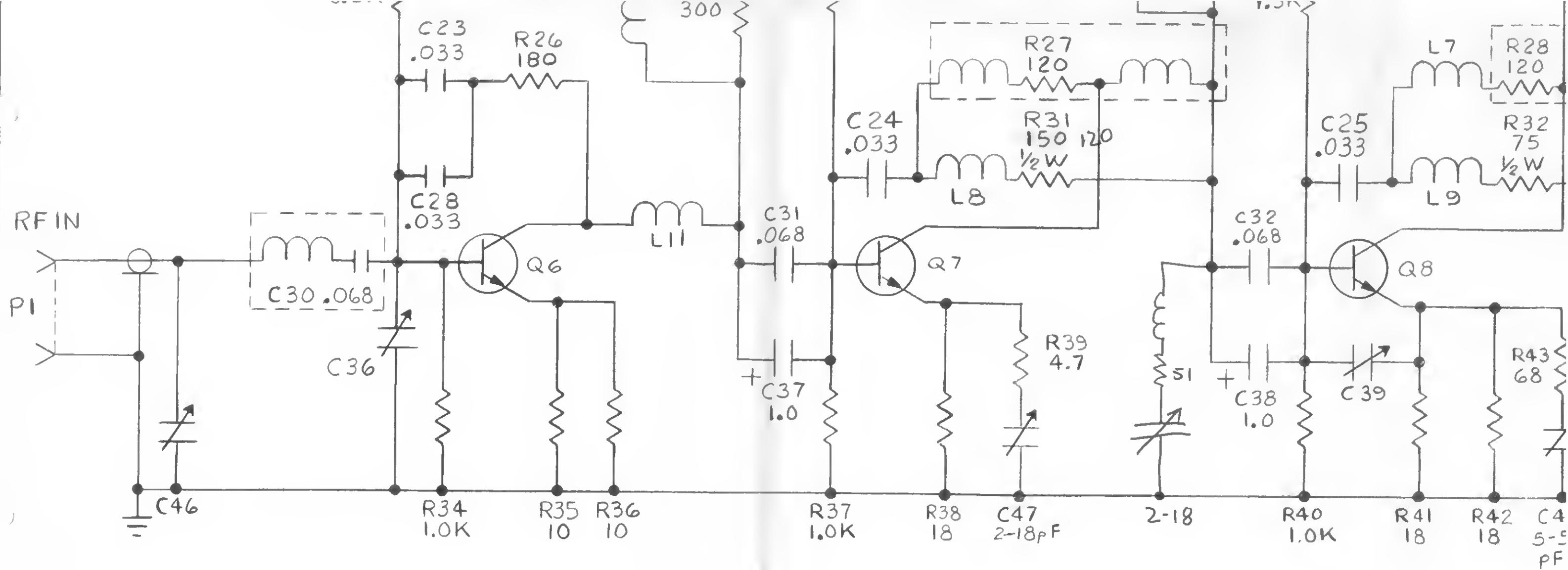
BILL NO: 1001203-501 REV: C U/M: EA DRAWING NO: ARC\1001203
DETECTOR ASSEMBLY

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-OSGN
0010	1002997	-	SCHEMATIC DIAGRAM, DETECTOR ASSY	EA	REF	ARC\1002997
0400	27097		CAP, FEE0-THRU, FILTER, 470PF, 400V	EA	1.000	MET\FA5C-4716MV C1
0700	30015		0100E, 1N82A, 2V-3V, SELECTED SENSITIVITY	EA	1.000	MWA\1N82A C1
2200	41013		CONNECTOR, COAX, BNC, PLUG, RG-1BBA/U	EA	1.000	KIN\KC-59-152 P1
2700	55512-51R0J		RESISTOR, FA0, CARBON COMP, 51, 5%, 1/4W	EA	1.000	R1
2710	55612-1000J		RESISTOR, FA0, METAL FILM, 100, 5%, 1/4-1/2	EA	1.000	TRW\GP55-1000+/-5% R2
4200	66151		WIRE, IRRADIATED, PVC, 26 AWG, SOLID, RED	IN	A/R	W1
4200	66152		WIRE, IRRADIATED, PVC, 26 AWG, SOLID, BLACK	IN	A/R	W1
4210	20004	-	CABLE ASSY, #22 AWG SHIELDED, 10.0"	EA	1.000	ARC\1002571 W4
5000	1002464-102	-	CAN, MODIFIED	EA	1.000	ARC\1002464 1
5010	80002		COVER, HU5365 CAN	EA	1.000	HUC\HU5365CAST-HT0 2







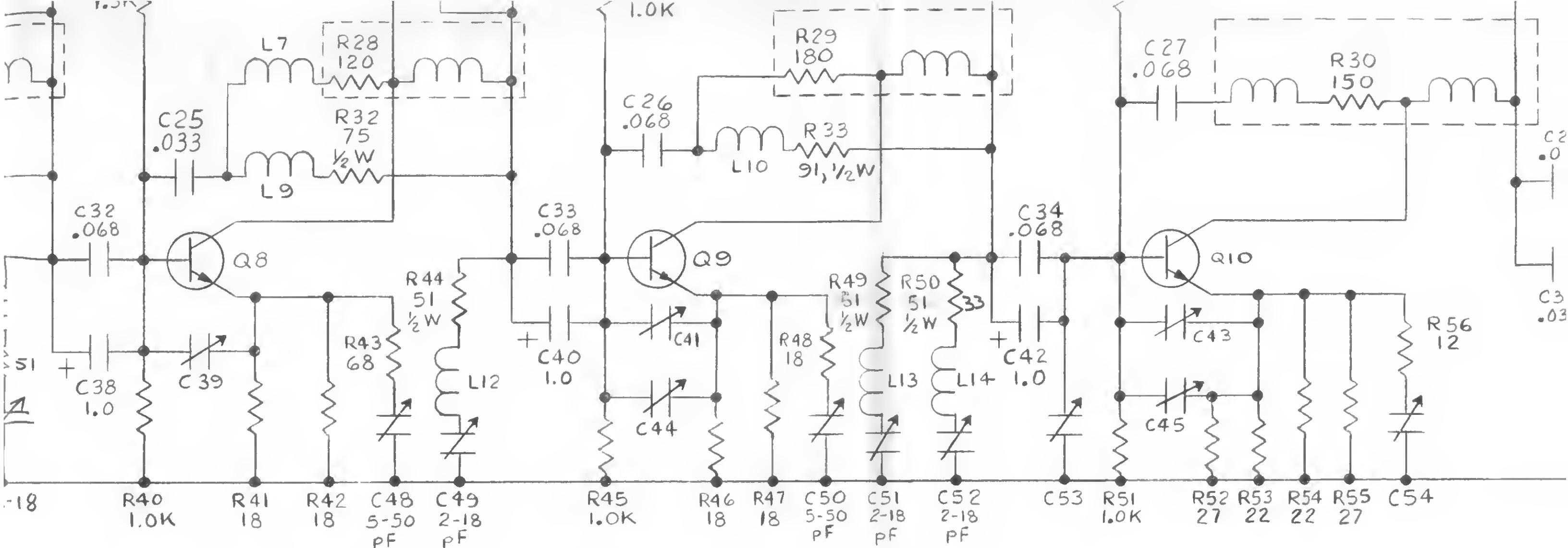


NOTES:

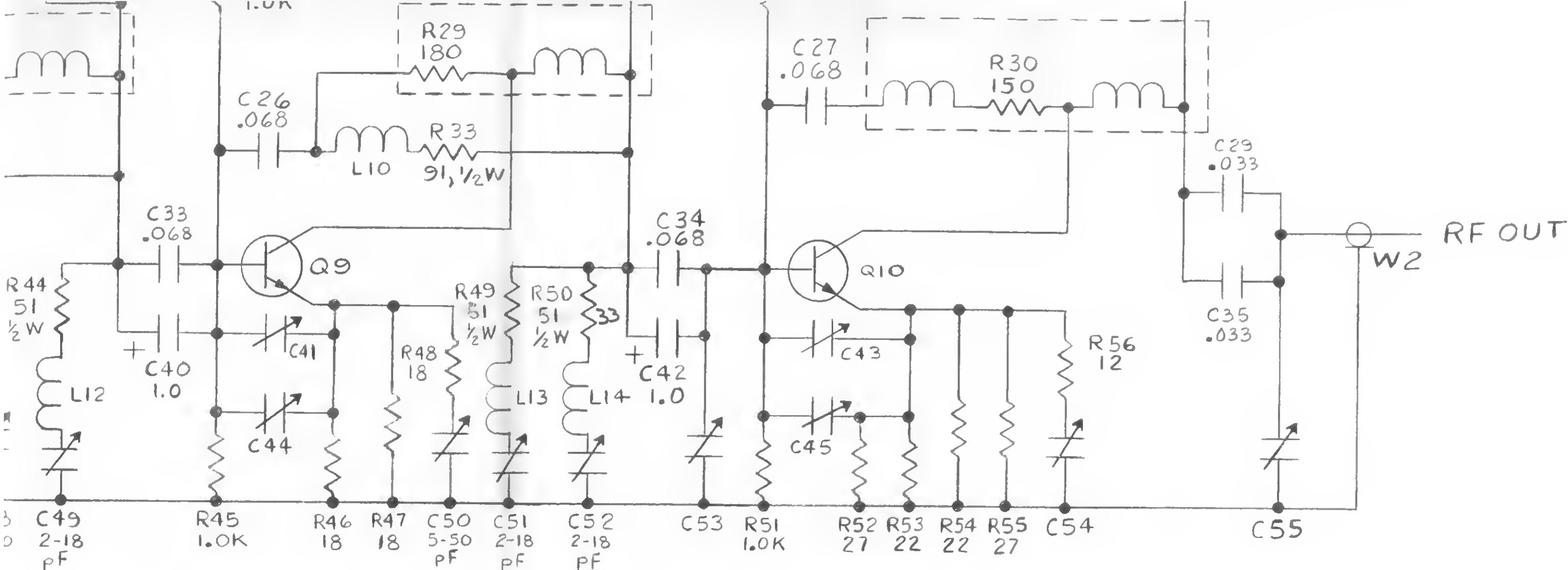
1.0 UNLESS OTHERWISE SPECIFIED:
 RESISTOR VALUES ARE OHMS
 RESISTOR RATINGS ARE 1/4 WATT
 CAPACITOR VALUES ARE MICROFARADS
 VARIABLE CAPACITORS ARE 1.5-4PF

2.0 THIS SCHEMATIC MAY REPRESENT MULTIPLE
 ASSEMBLIES. SEE APPROPRIATE PARTS LIST
 FOR FINAL COMPONENT VALUES.

REFERENCE DESIGNATIONS	LAST USED	NOT USED
J2	L18	J1
Q10	CRI	
C55	R56	
W2	P1	



ITEM	QTY. REQD.	DRAW C. BY	DATE
	UNLESS OTHERWISE SPECIFIED		
	DD NOT SCALE DRAWING.		
	DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.		
	ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.		
	REMOVE ALL BURRS AND SHARP EDGES.		
	TOLERANCE: $\pm .010$.		
	USED ON MODEL		



		ITEM	PART NO.	DESCRIPTION	MARK	FIN. MATERIAL
QTY. REQD.			PARTS LIST			
	UNLESS OTHERWISE SPECIFIED DO NOT SCALE DRAWING.		DRAWN C. BICKELMAN			
	DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.		DATE 5MAR87			
	ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.		CHKD			
	REMOVE ALL BURRS AND SHARP EDGES.		DATE			
10W1000M7	TOLERANCE: $\pm .010$.		MECH			
USED ON MODEL			<i>Not</i> DATE 8APR87			
		ELEC	<i>Not</i> DATE APRIL 8, 87	DWG. NO.	REV.	
				1003010		-
				X	SHEET	1 OF 1

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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1003002-501
RF ASSY

REV: D U/M: EA DRAWING NO: ARC\1003002

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-OSGN
0010	1003010	-	SCHEMATIC DIAGRAM,RF BOARD ASSY	EA	REF	
0100	1003006-501	B	RF BOARD ASSY	EA	1.000 ARC\1003006	A1
0110	1003003-501	-	RF BOARD ASSY	EA	1.000 ARC\1003003	A2
1500	20090	-	CABLE ASSY,COAX,RG-188A/U,BNC,9.0"	EA	1.000 ARC\1002494	P1
1510	20044	-	CABLE ASSY,COAX,RG-188A/U,5.5	EA	1.000 ARC\1002571	W2
5000	1000964-301	P	HEAT SINK	EA	1.000 ARC\1000964	1
5010	1000966-101	K	SHIELD	EA	4.000 ARC\1000966	6
5010	1000966-102	K	SHIELD	EA	1.000 ARC\1000966	7
5010	1000966-103	F	SHIELD	EA	1.000 ARC\1000966	8
5020	77064		COMPOUND, THERMAL JOINT, TYPE 120	EA	A/R	WAK\120-S
5030	69162		CABLE TIES, 7/8"MAX BUNOLE 01A,4" L	EA	1.000 OEN\08432	10
7100	11018		SCREW, MACH, PAN HO, CROSS-REC, ZN, 6-32 X .38, TYPE SW	EA	66.000	1
7110	11011		SCREW, MACH, PAN HO, CROSS-REC, S/S, 4-40 X .38	EA	2.000	2
7500	12022		WASHER, FLAT, B/ZINC PLTG, .312 00 X .164 10 X .060	EA	8.000 UNC\5-781-M01F05AG 3	
7500	12023		WASHER, FLAT, B/ZN PLTG, .312 00 X .141 10 X .093 THK	EA	28.000 UNC\5-783-M01F05AG 5	

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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0055 PAGE: 1

BILL NO: 1003006-501 REV: B U/M: EA DRAWING NO: ARC\1003006
RF BOARD ASSY

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-DSGN
5000	1003007-501	E	PWB ASSY,RF	EA	1.000	ARC\1003006
5000	1003008-501	B	RF COMPONENT KIT	EA	1.000	ARC\1003006

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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1003007-501
PW8 ASSY,RF

REV: E U/M: EA DRAWING NO: ARC\1003006

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-RER	DRAWING NUMBER	CRCT-OSGN
0400	27198		CAR,CERAMIC,.01MF,+80-20%,100V,CHAR.25U	EA	6.000	MPC\EF104Z	C2 ,C3
							C5 ,C6
							C14 ,C16
0410	27051		CAR,TANT,.33UF,35VDC	EA	1.000	MAL\TOC336K035WLG	C4
0420	27192		CAR,CERAMIC,.022MF,20%,25V,CHAR.15T	EA	4.000	MUE1CA223M	C7 ,C9
							C11 ,C13
0430	27047		CAR,TANT,1UF,50V	EA	9.000	MAL\TOC105M050WLE	C8 ,C10
							C12 ,C15
							C17 ,C37
							C38 ,C40
							C42
0440	27196		CAP,CERAMIC,.01MF,20%,25V,CHAR.15T	EA	5.000	MUE1CA-104M	C18 ,C19
							C20 ,C21
							C22
0450	27045		CAR,CERAMIC,.033UF,100VDC	EA	6.000	TCC\UEZ333M1	C23 ,C24
							C25 ,C28
							C29 ,C35
0460	27046		CAR,CERAMIC,.068UF,100V	EA	7.000	VIT\VP32BY683KB	C26 ,C27
							C30 ,C31
							C32 ,C33
							C34
0470	27125		CAR,VARIABLE,CERAMIC,WPO,1.5-4RF,250V	EA	5.000	JOE19371	C36 ,C46
							C53 ,C54
							C55
0480	27128		CAR,VARIABLE,2-18PF,250V	EA	4.000		C47 ,C49
							C51 ,C52
0490	27129		CAP,VARIABLE,5-50PF,250V	EA	2.000	MER\2810C5R5500H	C48 ,C50
0700	1M5401		0100E,3AMP,100V PIV	EA	1.000	SSM\1M5401	CRI
1800	49112	-	INDUCTOR,AIR,WOUNDED,012-03-05R0-A03-22-2	EA	1.000	ARC\1002503	L1
1805	49000	-	INDUCTOR,CORE,023-623X1-10-26-2-1	EA	2.000	ARC\1002497	L2 ,L3
1810	49001	-	INDUCTOR,CORE,023-612X1-09-26-2-1	EA	2.000	ARC\1002803	L4 ,L6
1820	49002	-	INDUCTOR,CORE,023-605X1-32-26-2-1	EA	1.000	ARC\1002803	L5
1850	49006	-	INDUCTOR,AIR,WOUNDED,012-04-04R0-A03-26-2	EA	2.000	ARC\1002503	L8 ,L10

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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: EC056 PAGE: 2

BILL NO: 1003007-501
PWB ASSY,RF

REV: E U/M: EA DRAWING NO: ARC\1003006

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-OSGN
1860	49007	-	INDUCTOR,AIR,WOUNDED,012-04-05R0-A03-26-2	EA	1.000 ARC\1002503	L9
1865	49005	-	INDUCTOR,AIR,WOUNDED,012-04-02R0-A03-22-2	EA	1.000 ARC\1002503	L12
1870	49008	-	INDUCTOR,AIR,WOUNDED,012-04-03R0-A03-26-2	EA	2.000 ARC\1002503	L13 ,L14
2500	2N3906		TRANSISTOR,SWITCHING,PNP,40V,0.2A,1W	EA	5.000 ARE\2N3906	01 ,02 03 ,04 05
2700	55612-I501J		RESISTOR,FXO,METAL FILM,1.5K,5%,1/4-1/2W	EA	4.000 TRW\GP55-1501+/-5%	R1 ,R3 R5 ,R22
2710	55612-2700J		RESISTOR,FXO,METAL FILM,270,5%,1/4-1/2W	EA	1.000 TRW\GP55-2700+/-5%	R2
2720	55514-1200J		RESISTOR,FXO,CARBON COMP,120,5%,1W	EA	1.000 A-B1GB1215	R4
2730	55515-82R0J		RESISTOR,FXO,CARBON COMP,82,5%,2W	EA	1.000 A-B1HBB205	R6
2740	55612-3900J		RESISTOR,FXO,METAL FILM,390,5%,1/4-1/2W	EA	2.000 TRW\GP55-3900+/-5%	R7 ,R9
2750	55515-10R0J		RESISTOR,FXO,CARBON COMP,10,5%,2W	EA	1.000 A-B1HB1005	RB
2760	55515-15R0J		RESISTOR,FXO,CARBON COMP,15,5%,2W	EA	1.000 A-B115 OHM,5%,2W	R10
2765	55515-I2R0J		RESISTOR,FXO,CARBON COMP,12,5%,2W	EA	1.000 A-B1HB1205	R11
2770	55612-2701J		RESISTOR,FXO,METAL FILM,2.7K,5%,1/4-1/2W	EA	6.000 TRW\GP55-2701+/-5%	R12 ,R13 R14 ,R16 R17 ,R20
2790	55612-3301J		RESISTOR,FXO,METAL FILM,3.3K,5%,1/4-1/2W	EA	1.000 TRW\GP55-3301+/-5%	R18
2800	55612-3000J		RESISTOR,FXO,METAL FILM,300,5%,1/4-1/2W	EA	1.000 TRW\GP55-3000+/-5%	R19
2810	55612-1800J		RESISTOR,FXO,METAL FILM,180,5%,1/4-1/2W	EA	2.000 TRW\GP55-1800+/-5%	R21 ,R23
2820	55612-1001J		RESISTOR,FXO,METAL FILM,1K,5%,1/4-1/2W	EA	7.000 TRW\GP55-1001+/-5%	R24 ,R25 R34 ,R37 R40 ,R45 R51
2830	55612-1500J		RESISTOR,FXO,METAL FILM,150,5%,1/4-1/2W	EA	1.000 TRW\GP55-1501+/-5%	R31
2840	55612-75R0J		RESISTOR,FXO,METAL FILM,75,5%,1/4-1/2W	EA	1.000 TRW\GP55-75R0+/-5%	R32
2850	55612-91R0J		RESISTOR,FXO,METAL FILM,91,5%,1/4-1/2W	EA	1.000 TRW\GP55-91R0+/-5%	R33

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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 3

BILL NO: 1003007-501
PWB ASGY,RF

REV: E U/M: EA DRAWING NO: ARCV1003006

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-DSGN
2860	55512-10R0J		RESISTOR,FXD,CARBON COMP,10,5%,1/4W	EA	2.000	A-B\CB1005 R35 ,R36
2870	55512-18R0J		RESISTOR,FXD,CARBON COMP,18,5%,1/4W	EA	4.000	A-B\CB1805 R38 ,R41 R42 ,R48
2880	55512-4R70J		RESISTOR,FXD,CARBON COMP,4.7,5%,1/4W	EA	1.000	A-B\CB4765 R39
2890	55512-6R80J		RESISTOR,FXD,CARBON COMP,6.8,5%,1/4W	EA	1.000	A-B\CB6865 R43
2900	55513-51R0J		RESISTOR,FXD,CARBON COMP51,5%,1/2W	EA	3.000	R44 ,R49 R50
2910	55512-36R0J		RESISTOR,FXD,CARBON COMP,36,5%,1/4W	EA	10.000	A-B\CN3605 R46 ,R47 R52 ,R53 R54 ,R55 R57 ,R58 R59 ,R60
2920	55512-12R0J		RESISTOR,FXD,CARBON COMP,12,5%,1/4W	EA	1.000	A-B\CB1205 R56
4200	66047		WIRE,BUSS,TINNEO COPPER,22 AWG	IN	5.000	ALP\9022 W1 ,2
4200	66139		TUBING,TEFLON,NAT'L CLR,20AWG,.03410,.012WALL THK IN A/R			ALP\TFT200 20AWG W1
5000	1000866-101	C	PWB,RF BOARD	EA	1.000	ARCV1000866 1

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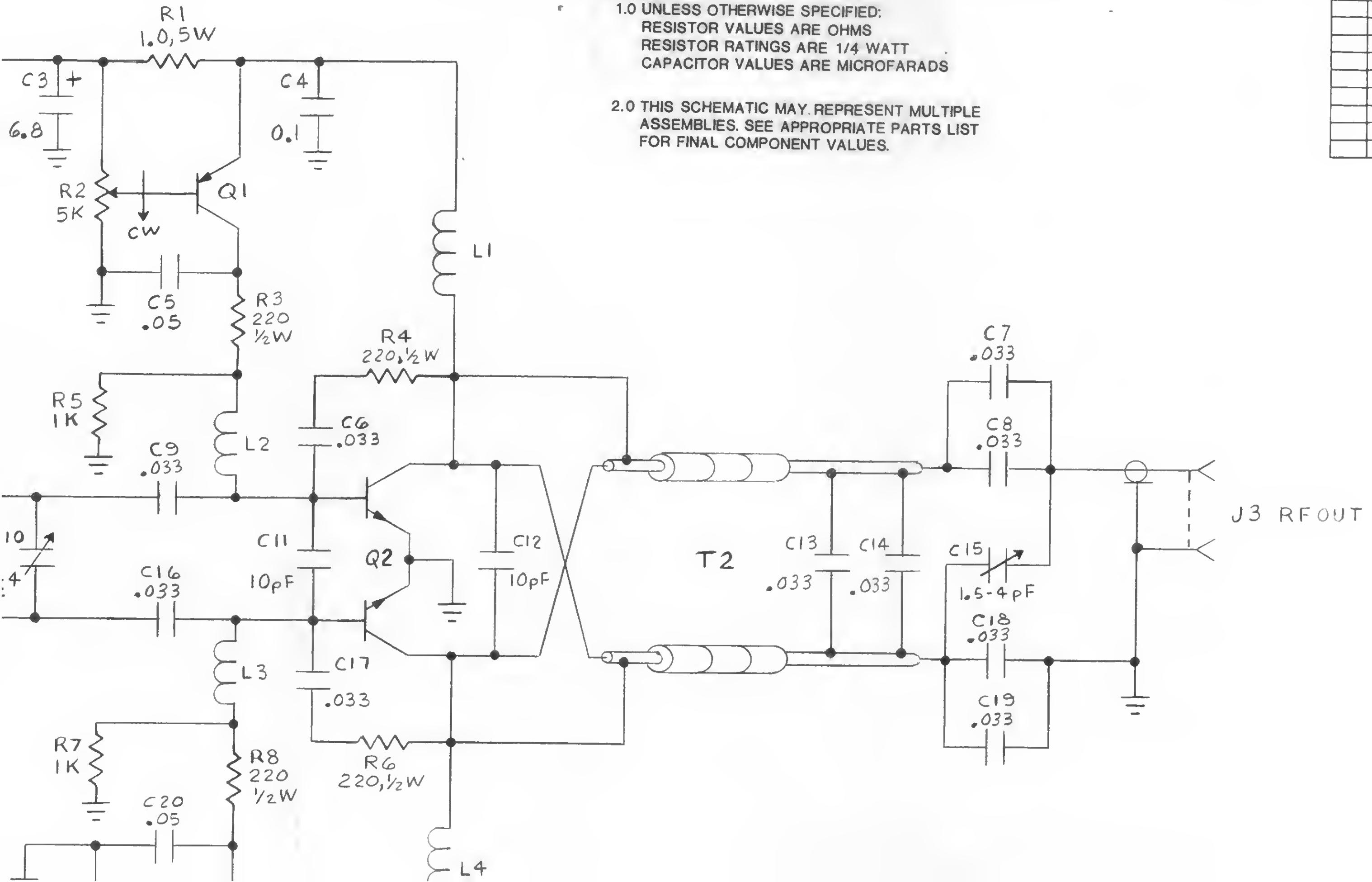
AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: I003008-501
RF COMPONENT KIT

REV: B U/M: EA DRAWING NO: ARC\1003006

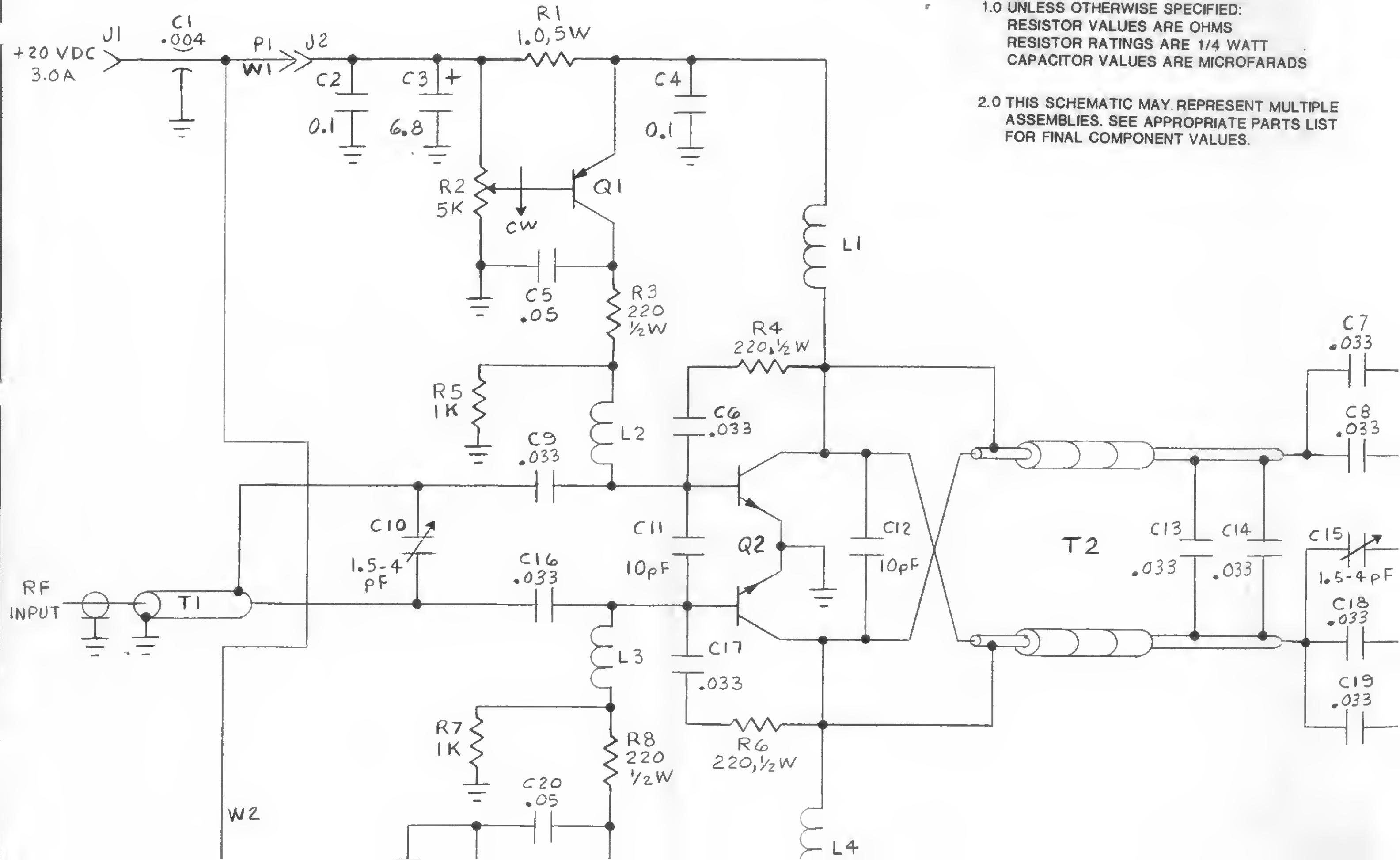
SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING	NUMBER	CRCT-DSGN
0400	27100		CAP,FEED-THRU,FILTER,.004UF,500V	EA	1.000	T1S1FR3-50	C1
0410	27125		CAP,VARIABLE,CERAMIC,MPO,I.5-4PF,250V	EA	5.000	JDE\937I	C39 ,C41 C43 ,C44 C45
1500	41110		SOCKET,PIN,.040 PIN-THRU HOLE	EA	1.000	CON\09-9002-1-04	J2
1800	49003	-	INDUCTOR,AIR,WOUND,012-02-02R0-803-26-2	EA	1.000	ARC\1002503	L7
1810	77103		STRIP,COPPER,.125 W X .008 THK	IN	0.500		L11
2500	1000034-125	AF	TRANSISTOR,RF,HI POWER	EA	1.000	ARC\1000034	06
2510	1000034-158	AL	TRANSISTOR,RF,.370,8-32 STUO	EA	2.000	ARC\1000034	07 ,08
2520	1000034-130	AL	TRANSISTOR,RF,HI POWER	EA	1.000	ARC\1000034	09
2530	1000034-137	AL	TRANSISTOR,RF,HI POWER	EA	1.000	ARC\1000034	010
2700	55612-3600J		RESISTOR,F10,METAL FILM,360,5%,1/4-1/2W	EA	1.000	TRW\GP55-3600+/-5% R15	
2710	55612-1200J		RESISTOR,F10,METAL FILM,120,5%,1/4-1/2W	EA	2.000	TRW\GP55-1200+/-5% R27 ,R28	
2710	55612-1800J		RESISTOR,F10,METAL FILM,180,5%,1/4-1/2W	EA	2.000	TRW\GP55-1800+/-5% R26 ,R29	
2720	55612-1500J		RESISTOR,F10,METAL FILM,150,5%,1/4-1/2W	EA	1.000	TRW\GP55-1501+/-5% R30	

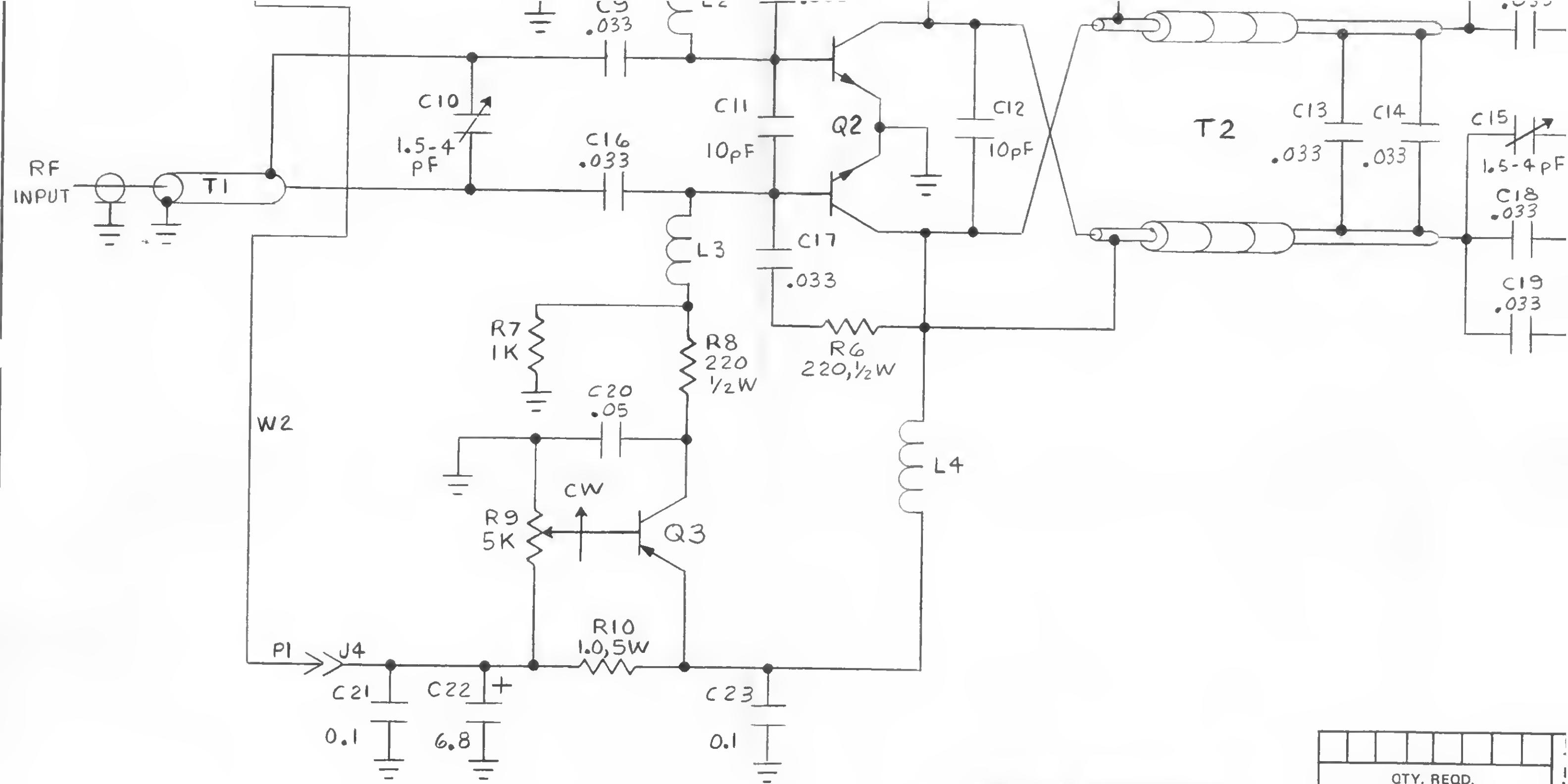


NOTES

1.0 UNLESS OTHERWISE SPECIFIED:
RESISTOR VALUES ARE OHMS
RESISTOR RATINGS ARE 1/4 WATT
CAPACITOR VALUES ARE MICROFARADS

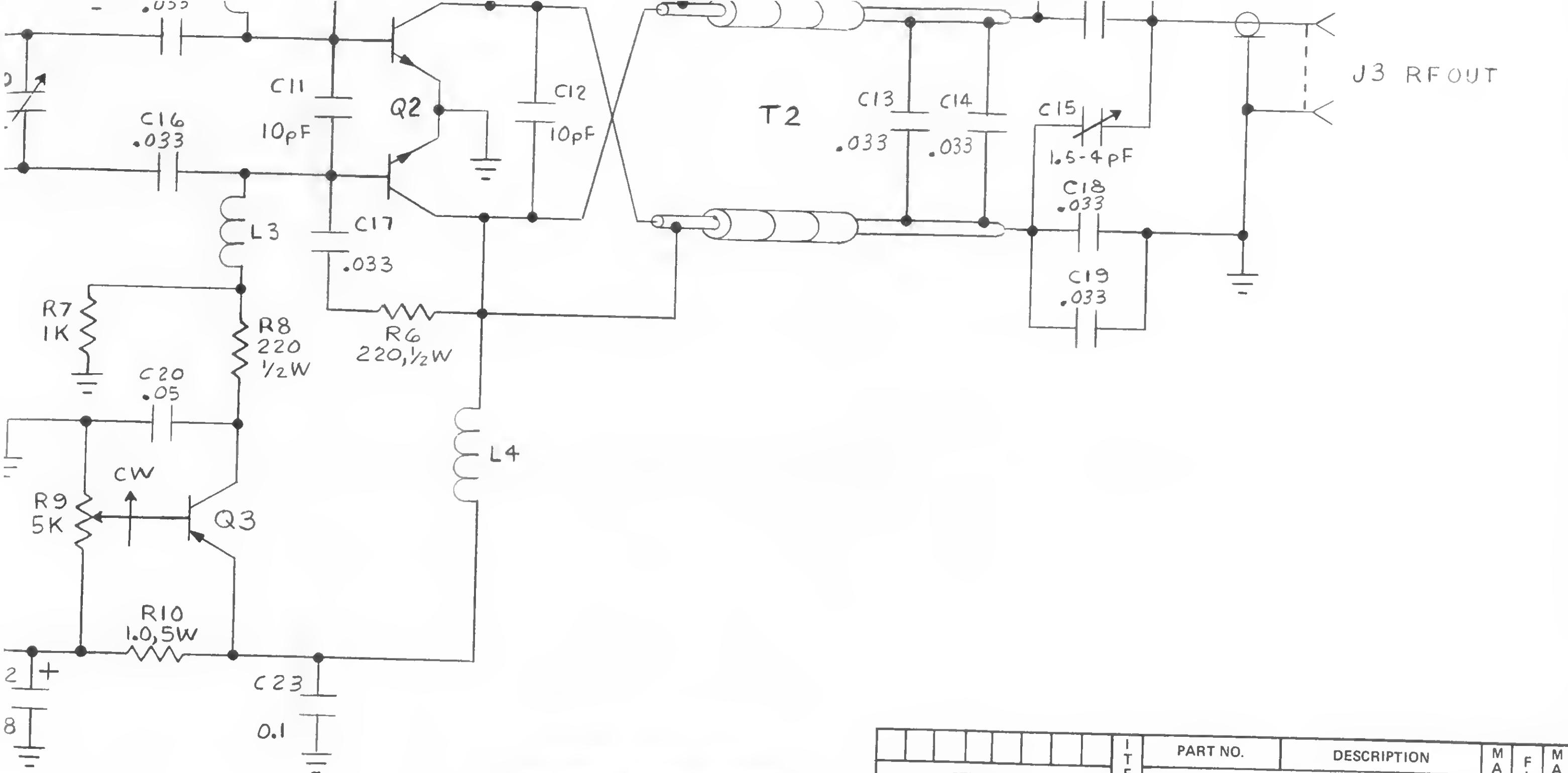
2.0 THIS SCHEMATIC MAY REPRESENT MULTIPLE ASSEMBLIES. SEE APPROPRIATE PARTS LIST FOR FINAL COMPONENT VALUES.





REFERENCE DESIGNATIONS
LAST USED NOT USED
L4 C23
J4 R10
Q3 T2
PI W2

QTY. REQD.	
	UNLESS OTHERWISE SPECIFIED
	DO NOT SCALE DRAWING.
	DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
	ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
	REMOVE ALL BURRS AND SHARP EDGES.
	TOLERANCE: $\pm .010$.
10W1000M7	USED ON MODEL



REFERENCE	DESIGNATIONS
<u>LAST USED</u>	<u>NOT USED</u>
L4 C23	
J4 R10	
Q3 T2	
P1 W2	

		ITEM	PART NO.	DESCRIPTION	MARK	FIN	MATL
QTY. REQD.			PARTS LIST				
	UNLESS OTHERWISE SPECIFIED DO NOT SCALE DRAWING.		DRAWN C. BICKELMAN				
	DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.		DATE 5 MAR 87				
	ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.		CHKD				
	REMOVE ALL BURRS AND SHARP EDGES.		DATE				
	TOLERANCE: $\pm .010$.		MECH				
IOW1000M7 USED ON MODEL			<i>skf</i> DATE 8 APR 87		DWG. SCALE	DWG. ND.	REV.
			ELEC <i>skf</i> DATE 4/8/87		<i>skf</i>	1003009	-
						SHEET	1 DF 1

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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1003003-501
RF BOARD ASSY

REV: - U/M: EA DRAWING NO: ARC\1003003

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING	CRCT-DSGN
0010	1003009	-	SCHEMATIC DIAGRAM,RF BOARD ASSY	EA	REF	
5000	1003004-501	B	PWB ASSY,RF	EA	1.000	
5000	1003005-501	A	RF COMPONENT KIT	EA	1.000	

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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: 1003004-501
PWB ASSY,RF

REV: B U/M: EA DRAWING NO:

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING NUMBER	CRCT-OSGN
0400	27196		CAP,CERAMIC,.01MF,20%,25V,CHAR.Y5T	EA	4.000 MUE\CA-104M	C2 ,C4 C21 ,C23
0410	27055		CAP,TANT,6.8UF,50V	EA	2.000 MAL\TOC685K050NLF	C3 ,C22
0420	27195		CAP,CERAMIC,0.05UF,20%,25V,CHAR.Y5T	EA	2.000 MUE\CA503M	C5 ,C20
0430	27045		CAP,CERAMIC,.033UF,100VOC	EA	6.000 TCC\UEZ333MI	C7 ,C9 C13 ,C14 C1B ,C19
0440	27046		CAP,CERAMIC,.068UF,100V	EA	2.000 VIT\VP328Y6B3KB	C9 ,C16
0450	27125		CAP,VARIABLE,CERAMIC,NPO,1.5-4PF,250V	EA	2.000 JOE\9371	C10 ,C15
0460	27029		CAP,CHIP,10PF,10%,500V	EA	1.000 OIL\CI7AH100K4TAL	C11
1500	20006	-	CABLE ASSY,COAX,RG-142B/U,N,10.0	EA	1.000 ARC\1002494	J3
1510	41110		SOCKET,PIN,.040 PIN-THRU HOLE	EA	2.000 COM\09-9002-1-04	J2 ,J4
1800	49161	-	INDUCTOR,AIR,WOUNO,012-03-07R0-A04-22-2	EA	4.000 ARC\1002503	L1 ,L2 L3 ,L4
2500	54506		TRANSISTOR,SWITCHING,PNP,40V,2A,10W	EA	2.000 MOT\MP3-USIA	01 ,03
2700	55718-1R00J		RESISTOR,FX0,WW,1.0,5%,5W	EA	2.000 OHM\4530\95J1R0	R1 ,R10
2710	5591B		RES,VAR,CERMET,MULTITURN,TOP A00,5K,10%,1W	EA	2.000 MEP\8024EKW502	R2 ,R9
2720	55612-2200J		RESISTOR,FX0,METAL FILM,220,5%,1/4-1/2W	EA	2.000 TRW\GP55-2200+/-5% R3	,R8
2730	55612-1001J		RESISTOR,FX0,METAL FILM,1K,5%,1/4-1/2W	EA	2.000 TRW\GP55-1001+/-5% R5	,R7
3200	1000643-402	C	CORE,FERRITE,BEAO,CM05005	EA	12.000 ARC\1000643	T1 ,T2
3210	66094		WIRE,MICRO COAX,50 OHM,COPPER JCKT,PTFE-FEP DIE.MT IN	A/R	COM\UT47	T1
3220	66104		WIRE,COAX,SEMI-RIGID,25 OHM	IN A/R	COM\0E25038	T2
5000	1002120-101	-	PWB,RF BOARD	EA	1.000 ARC\1002120	1
5010	66122		TUBING,SHRINKABLE,BLACK,1.00 EXP,.500 REC	IN A/R	REM\F1T-221 1"EXP	

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AMPLIFIER RESEARCH
*** SINGLE LEVEL BILL OF MATERIAL LISTING ***

REPORT: E0056 PAGE: 1

BILL NO: I003005-501
RF COMPONENT KIT

REV: A U/M: EA DRAWING NO:

SEQ	PART NUMBER	REV	DESCRIPTION	U/M	QUANTITY-PER DRAWING	NUMBER	CRCT-DSGN
0400	27100		CAP, FEE0-THRU, FILTER, .004UF, 500V	EA	1.000	TXS\FR3-50	C1
0410	27045		CAP, CERAMIC, .033UF, 100VDC	EA	2.000	TCC\UEZ333M1	C6 ,C17
0420	27029		CAP, CHIP, 10PF, 10%, 500V	EA	1.000	OIL\CI7AH100K4TXL	C12
1500	41110		SOCKET, PIN, .040 PIN-THRU HOLE	EA	1.000	CON\09-9002-1-04	J1
2500	1000034-150	AL	TRANSISTOR, RF, HI POWER, BALANCED	EA	1.000	ARC\1000034	Q2
2700	55612-2200J		RESISTOR, FWD, METAL FILM, 220, 5%, 1/4-1/2W	EA	2.000	TRW\GP55-2200+/-5% R4	,R6
5000	20043	-	CABLE ASSY, 22 AWG, PIN, 5.0	EA	2.000	ARC\1002575	W1 ,W2

*** END OF REPORT E0056 - 09:38:45 14 MAY 1990 ***



160 School House Road, Souderton, PA 18964-9990 USA
TEL 215-723-8181 • TWX 510-661-6094 • FAX 215-723-5688

WARRANTIES: LIMITATION OF LIABILITY

Seller warrants (i) that seller has title to the goods sold and (ii) that the goods will be free from defects in material and workmanship for a period of one (1) year from date of shipment shown on Amplifier Research invoice. Seller's sole responsibility in fulfilling these warranties shall be to repair or replace any goods which do not conform to the foregoing warranties or, at seller's option, to give buyer credit for defective goods. Warranty service will be provided only for defective goods which are returned within the warranty period, freight costs prepaid, to Amplifier Research or its designated repair facility.

THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS. SELLER SHALL NOT BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM ANY BREACH OF WARRANTY.

No person other than an officer of Amplifier Research Corporation, has any authority to bind seller to any affirmation, representation or warranty except as specifically included in the preceding terms and conditions.



MODEL NO. 10W1000M7
SERIAL NO. 10359
TESTED BY J. A. V.
DATE 7/26/90

TEST DATA SHEET

FREQ (MHz)	POWER OUTPUT @ 1dB COMPRESSION (WATTS)	POWER OUTPUT SATURATED (WATTS) @ +2 dBm INPUT
.1	—	—
.2	—	—
.5	—	—
1	—	—
5	—	—
10	—	—
50	—	—
100	>12.7	12.7 +2 dBm
200	>14.5	14.5 +2
300	>16.3	16.3 +2
400	>13.9	13.9 +2
500	>12.8	12.8 +2
600	11.8	13.4 +2
700	>12.3	12.3 +2
800	>10.3	10.3 +2
900	>10.4	10.4 +2
1000	8.1	10.7 +2

GAIN 40 dB @ 4.3 WATTS OUTPUT @ 500MHz

FLATNESS \pm 1.5 dB DISTORTION -20 dBc Max
OPEN TEST ✓OK INPUT VSWR 2.0 : 1.0
SHORT TEST ✓OK OUTPUT VSWR —
STABILITY ✓OK REMOTE CONTROL OPERATION N/A (✓)

10W1000M7

S/N 10359

1000892
REV0989